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MARCH, 1882.

THE ANNUAL MEETING of the Western New York Horticultural Society was held in this city on the 25th, 26th, and 27th of January. The President, P. BARRY, occupied the chair and made the opening address, which was full of good suggestions, sound advice, and cheerful words of encouragement. We quote brief extracts: "It is to be regretted that so many of the wealthy class of our country prefer to spend large sums of money on costly dwellings and equipages, and comparatively little on their gardens or grounds, but this will change in time. Such societies as ours, now happily so numerous all over the country, will surely work some reform. It is a favorable and significant fact that a large number of the wealthiest and most influential citizens of New York and other large cities are becoming members of horticultural societies. Their example and co-operation cannot fail to give horticulture a great impetus; so, on the whole, we have good reasons for taking a hopeful view of the future."

Much of the address related to the effects upon vegetation of the exceptionally cold weather of the preceding winter and the drought of last summer, and the proper means of mitigating such excesses. In regard to the former, Mr. B. said: "All we can gather on this subject, from published reports, is that very hardy varie-

ties, known as 'iron-clads,' generally escaped, and that the damage was greater on low, alluvial bottoms than on high, rolling lands. This conforms to all our experience. To prepare for this conflict with severe winters it is plain, then, that the cultivator should endeavor to secure, by situation, soil and treatment, the greatest possible degree of hardiness which the species or variety is capable of attaining in our climate. Hardiness, or the power to resist extremes of cold, is generally recognized as a quality of the first importance. When a new variety of fruit or a new ornamental tree or plant is introduced, the first enquiry made is about its hardiness. In such climates as ours it is the one indispensable quality. What, then, can the cultivator do to promote hardiness? He can do much. First, and above all, our land must be dry; that is, absolutely free from stagnant moisture, either naturally or made so by underdraining. We all know that plants grown on low, rich, moist lands are filled with watery fluids which render them peculiarly susceptible to injury from frost. We often see plants on low, moist grounds killed by an early frost, when on adjacent dry ground, only a few rods distant, they escaped. Vegetable physiologists have adopted as an axiom, 'That the power of plants to resist cold is in the inverse ratio of the rapidity with which the fluids cir-

culate,' and 'that the liability of the fluids of plants to freeze is greater in proportion to the size of the cells.' That is, the less water there is in the fluids of the plants, and the smaller the cells, the greater is their power to resist cold. This is in harmony with all our experience. This is the reason why such destruction has fallen upon western plantations. I have seen orchards at the west, on low, rich lands, frozen while in full leaf so that they looked perfectly black and dead. They were full of watery fluids when overtaken by the frost. The Chairman of the Wisconsin State Fruit Committee reports that the exposed crowns of many of the highest limestone bluffs in that State, from one hundred to four hundred feet above the adjacent valley, produce as perfect orchards as can be desired, up to latitude  $44\frac{1}{2}^{\circ}$ , where a large variety of our eastern Apples and Pears are permanently successful; while in the valley below nothing but the Siberians or Duchess of Oldenburg will stand. This is the experience all over the west, and it is ours, only that in our milder climate it is not so marked.

"In the second place, soil must possess sufficient fertility to produce a moderate, healthy growth. Trees or plants that are underfed become stunted, and are neither useful nor beautiful. The sooner they die the better. Those that are overfed make a rank, watery growth, which does not ripen, and is not in a condition to resist cold. These extremes are by no means uncommon in the treatment of trees. As a general thing the starvation process is more common, but it is also very common to apply manure to excess. To maintain trees in a state of health and vigor, yielding their maximum of utility or beauty, requires both care and skill in the application of fertilizers and the treatment of the soil. In the management of fruit trees, overcropping is a great and very general evil. A tree overloaded with fruit can neither perfect the fruit nor ripen its wood properly, and in a severe climate it is quite likely to succumb to a degree of cold which, under proper treatment, it could have resisted perfectly. It is safe to say that millions of trees are annually ruined in this country by overcrops. The Grape is very sensitive in this respect; if overloaded the fruit will not ripen, nor will the wood ripen. It is not uncommon to hear people complain

of their Grapes not ripening and the vines being killed, and ascribing the trouble to every cause but the right one, overcropping. This is an error committed not by novices only.

"A great many trees and plants are killed by kindness, too. New plants, costing a high price, are very apt to be stimulated by manure and water, so that, instead of making a moderate, well-ripened growth, they are forced, as it were, and come out dead in the spring. I have seen many such cases. I will only refer to one case on our own grounds, as a fair example.

"There was a large bed of new *Hydrangea paniculata* on the lawn, the plants were set close, and it was thought that a surface dressing of manure and plenty of water would assist their flowering, which takes place late in the season, and generally when it is dry. This treatment was well enough, but they got too much of both manure and water. They did not ripen either roots or tops, and nearly all were dead the following spring, while those in other parts of the grounds left to themselves were not injured in the slightest degree. I will mention another instance which has frequently arrested my attention, as showing the importance of well-ripened wood. The varieties of *Golden Arbor Vitæ* have proved so liable to be injured in winter that their culture with us has been almost abandoned. Four years ago a couple of them were planted on a piece of rock-work, and these have escaped the slightest injury, even during the last severe winter. They make a moderate growth, but it is healthy; the color is perfect, and they seem quite at home. In every other situation they have failed. It is because the roots, running among the rocks, free from stagnant moisture, acquire perfect ripeness, as do the whole plants. I believe that by special means of this sort we may do much to increase the hardiness of many beautiful trees and plants only half known. Much injury is done in city gardens by the excessive use of water—not only to the lawns, but to trees and plants, and to health as well. Ripeness, then, is essential to hardiness, is the source of hardiness, and the cultivator should never lose sight of this. Thanks to our climate, it is not so difficult to secure ripeness here as it is in some parts of our country. In

a report received from Minnesota, a few days ago, the writer stated that they had scarcely any autumn, but passed at once from the season of growth to severe frosts. Here our autumns are splendid, with rarely frost enough to kill flowers until about the first of November. The early frost is the exception, and it is generally so light as to do little harm, so that generally it is our own fault if our trees and plants are not well ripened. The generally acknowledged superiority of nursery trees grown in Western New York is due mainly to the perfect ripeness they acquire. The means to be employed to secure ripeness and hardiness may be briefly summed up as follows:

"1. A dry soil, absolutely free from stagnant moisture.

"2. Sufficient fertility only to produce a moderate and healthy growth.

"3. Such treatment of the soil as will encourage growth early in the season and arrest it early in autumn. In the case of tender plants, these precautions will be all the more necessary.

"4. In the case of fruit-bearing trees and plants, avoid over-cropping.

"And now let us consider very briefly what the cultivator may do to avert the ill effects of a drought such as that of last summer. The most effectual and practical means within my knowledge is the constant and thorough tillage of the soil. According to my observation, wherever the soil was kept finely pulverized and stirred by the horse-hoe or cultivator, or, if in the garden, with a good, steel rake, at least once a week, the most severe droughts we ever experience here do very little harm. I have never seen better growth of nursery trees than during the past summer, and this is always the case in a dry season, with thorough cultivation. I have noticed the same effects in orchards. Where the ground was cultivated well the trees remained healthy in foliage and matured their fruit, while those not cultivated dropped both foliage and fruit to a great extent, and at the same time were injured for the future. The same effect has been observed in farm crops. When in California, we were told by fruit-growers that the first impression there was that no fruit could be grown without irrigation, but they had ascertained by experience that for trees irrigation was unnecessary. Thorough cultivation was

sufficient, and in the most flourishing plantations we visited, the ground was kept so fine and loose that we sank into it over our shoes. We were surprised at the results.

"Experienced cultivators know that in the dryest times soil kept well cultivated will show a certain degree of moisture two or three inches below the surface, and when not cultivated, it will be dry as powder several feet deep. The influence of culture in this respect is truly wonderful, and especially when the subsoil plow has been employed. This greatly increases the power of the soil to draw moisture from below in a time of drouth. It is an axiom in vegetable physiology that 'the power of plants to resist extremes of temperature is in direct proportion to the capability which the roots possess of absorbing sap less exposed to external influence of the atmosphere and the sun.' The deep and thorough culture enables the roots of plants to draw comparatively cool moisture from below, and instead of flagging and wilting under the hot sun and dry air, they rejoice in both. I am surprised that farmers do not employ the subsoil plow more than they do. It is a grand implement. What would nurserymen do without it? If properly used, I believe it would, on most farms in this country, nearly or quite double the productive capacity of the soil. Farmers are buying expensive fertilizers, far less valuable than might be found in their own soil by deep plowing and tillage. It is the subsoil plowing and thorough tillage that enables a nurseryman to take forty or fifty bushels of wheat to the acre, without manure, from land that had been cleared of a four or five year crop of trees. To resist the ill effects of drought, then, I will say, plow deep, keep the surface freely fertilized and constantly stirred once a week or oftener, cultivate—cultivate deeply and thoroughly and defy the drought. Mulching has been strongly commended, but is applicable only in certain cases. It is useful in the case of newly planted trees, but even with mulching, the surface of the ground should be kept finely pulverized."

A paper read by J. S. WOODWARD, of Lockport, entitled "Facts and Fallacies of Fruit-growing," contained some very instructive points, which were well elucidated. "No fallacy is more commonly

believed than that any soil is good enough for Apple growing. The fact is that no land is too good, and no location too desirable for Apples, and if we can't afford the best soils for them, we had much better not plant at all.

"It is a fallacy in a market orchard to plant too many varieties.

"It is a fallacy in the selection of trees to give more attention to the development of body and top than to the root and collar.

"It is a popular fallacy that trees may be planted almost any way, so that they are got into the ground in comparatively straight rows. I know one instance when three men dug the holes and planted twelve hundred trees in two days; in some places they used a nine-inch post-augur to make the hole, and, though through the aid of a very wet summer most of those trees lived, they have never made a satisfactory orchard. The land should be well prepared, and the holes dug not less than one foot further across than the longest roots extend, and deep enough to receive the tree to the depth it stood in the nursery, and the soil below should be well loosened. The planter should place the tree in position, taking care that the rows be straight both ways; he should then by hand carefully straighten each root, and see that the rich surface soil fills all spaces between them. With the same care should the entire hole be filled and the soil carefully packed around the roots and body. More than half the subsequent growth and vigor of the tree depends upon careful planting.

"Another and very pernicious fallacy is the notion that trees should be planted close; that the more trees to the acre the greater profit. Thirty-six feet, and if the soil is especially adapted to orcharding, forty feet, is none too far apart. We not only want the sun to shine on all parts of the tree, but we want its beneficial influence on the soil as well; there is nothing so good to kill the germs of disease and to sweeten the soil and enable it to support the tree as sunlight.

"A grave fallacy is the belief that orchards should be pruned only at intervals of several years, and that any novice, however green, can be trusted with the pruning-knife and saw. An Apple tree should be regularly and systematically pruned each year from the planting, and

just enough to keep an open and symmetrical head, and so that at no time shall it be necessary to remove any large limbs.

"The greatest of all fallacies is this, that after having cropped the orchard from planting to full maturity, we may then apply all the manure to other parts of the farm, and leave the orchard with only the decayed leaves and weeds to maintain its fertility.

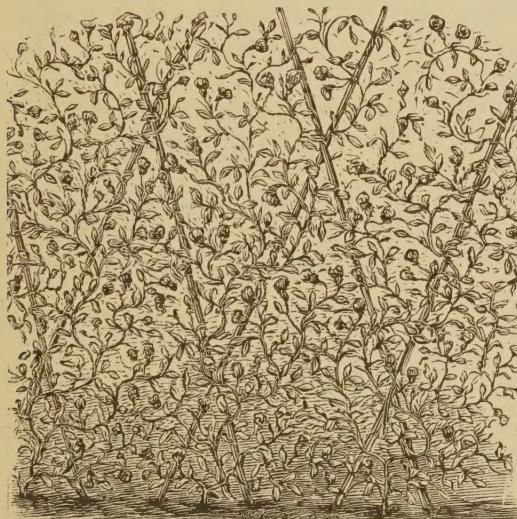
"The quantity of manure that may be profitably used on an orchard in full bearing is hard to determine. I have never seen an instance where I thought too much was used; instead of piling it about the trees, a general application of the whole surface under the trees is better."

Professor COMSTOCK, of Cornell University, read an instructive essay upon the scale-insect, with especial reference to those species infesting fruit trees, giving their life history, their habits, and the best means of exterminating them and of preventing their spread. It was shown that trees infested with scale-insect could be rid of them by the application of whale-oil soap. One fourth of a pound of soap should be used to one gallon of water; the mixture heated in order to dissolve the soap thoroughly, and the solution applied while it yet retains a temperature of 100° F. Repeat the application after an interval of a few days. A hand, force, or fountain pump is the best implement to distribute the liquid with.

Mr. CHAS. D. ZIMMERMAN, of the State farm, Lancaster, Ohio, as Chairman of the Committee on Entomology, presented a paper giving an account of the weak points of some of our injurious insects, and showing how they may be most easily destroyed. In conclusion he said: "It is much to be regretted that the popular feeling seems to be against the introduction of the rudiments of the sciences into our public schools. The rising generation, to be successful as tillers of the soil, will require a more accurate knowledge of economic entomology than the present or the past, as noxious insects are ever on the increase. Some of the European nations are far ahead of us in this respect, for there, in the common schools, the different branches of agriculture and horticulture, theoretical as well as practical, often receive attention."

## SWEET PEAS.

The Sweet Pea presents a charming individuality that wins and holds our admiration. Every curve in its peculiar form is graceful and its colors are bright, or soft, and contrasting. Besides, it is one of those flowers that "from the voluptuous June catch their perfumings." The petals of the Sweet Pea, which are five in number, and from their peculiar arrangement have received different names, are grouped into two pairs with the odd one standing somewhat erect back of them. The lower pair is called the keel, while the petals enclosing them are the wings, and the uppermost petal is called the banner. In the colored plate the center flower is known as Scarlet. In this it may be noticed that the petals forming the keel are white, the wings rose-colored, and the banner scarlet. At the right of this center flower is one with white keel and very dark crimson wings and banner, this variety in the trade is called Black. Directly underneath the last mentioned one is what is known as Blue Edged. Above the center flower, Scarlet, is one with white keel and white wings and a rose-colored banner; this is Painted Lady. At the upper left-hand corner of the group is Scarlet Invincible, having a white keel and scarlet wings and banner.



Sow the seed as early as possible in the spring, about four inches deep, in good, rich, mellow soil. One way of sowing them, and a very good one, is to mark out a circle two feet in diameter, four inches deep, and sow the Peas around,

about an inch apart. A stake about five feet high should stand at the center; just inside the circumference place a barrel hoop and peg it down to the ground, and



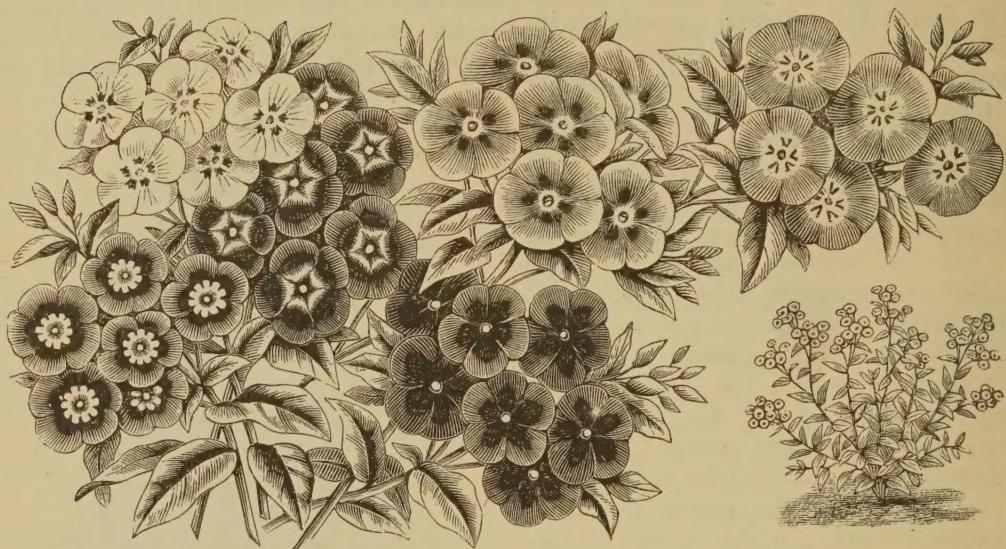
attach strings to it about three inches apart all around, fastening them also at the top of the stake. On these strings the stems will climb by means of their tendrils, arranging themselves in a form, that of a cone, most advantageous to display their beautiful blooms. Another course often pursued is to sow the seed in straight lines, supporting the stems either with strings or brush, thus forming a sort of hedge. Mulching the ground with some light litter when the season becomes advanced has the effect to keep the soil cool, which is a most favorable condition for this plant. Cutting the flowers, and thus preventing the seed to form, has a tendency to keep the plants long in a blooming state.

One of our engravings shows a portion of a hedge supported by sticks. We have made the hedge thin, so as to show how the sticks are placed, but naturally they are almost, or entirely, concealed. The other is a clump or group supported by a stake or two in the center.

Sweet Peas as cut flowers, odorous and variously colored and tinted, are of the highest value for bouquets, vases, and many other purposes.

"But who can paint  
Like Nature? Can imagination boast  
Amid its gay creation, hues like hers?  
Or can it mix them with the matchless skill,  
And lose them in each other, as appears  
In every bud that blows."

## ANNUALS FOR BEDDING.

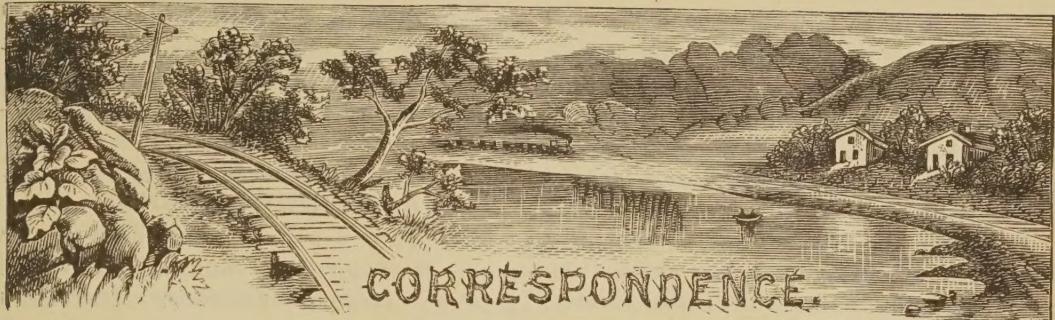


PHLOX DRUMMONDII.

If a large number of plants of Petunia and Phlox Drummondii are wanted for planting out, it will be well to start them soon. Those not having the facilities of a greenhouse or plant-frame can make use of the window with a little extra care. Pots, or shallow pans, or boxes, should be filled with some light soil and the seed sown therein. The soil should be light, porous and rich. Some good garden soil, mixed with old, decayed manure, well commingled and run through a sieve, to take out all the coarse parts, may be mixed with an equal amount of fine leaf-mold and half as much sharp sand. This will make a soil that the water can pass through freely and will not crust or bake on the top, and through which the plantlets can easily push themselves and extend their roots. When separate colors and varieties are to be raised, the seed should be sown in rows, carefully labeling each variety. A quarter of an inch is sufficient depth for Phlox seed, and the Petunia need be only half as deep. Instead of covering the seeds with the soil after they have been placed in the drills, it will be even better to scatter sand along, filling the drills with it, as it will offer the least resistance to the little germinating plants. The soil should be carefully watered, and then be allowed to stand for a time and drain before sowing the seed; after seed-sowing immediate water will not be needed. The watering at all times should be done lightly and carefully, so as not to

disturb the surface, or drench the soil. When the plants have made their appearance they should have the benefit of the best light, and be kept in a temperature of 65° to 70° in the daytime, and not less than 55° at night. When the plants have made a few leaves and begin to crowd each other, they should be carefully lifted and transplanted separately into other boxes, where they will have room to develop and can receive the light and air on all sides. A second transplanting a few weeks later will be desirable, and the plants will be the stockier and better-rooted for this extra labor expended on them. Give air at suitable times, and by watchful care and attention keep the plants in vigorous growth until they are ready to take their place in the open grounds, for which they may be prepared by gradually exposing them more and more to the air, and thus hardening them off.

If the weather should promise to be dry when the proper time arrives to plant out, rake the beds over and proceed with the work, and afterwards give each plant a little water and provide some slight shade; there is nothing better in this way than a handful of newly cut grass laid thinly over each plant. The grass shades for a day or two, but, as it dries, gradually exposes the plants to the sun, which they are thus enabled to bear. The after culture is to stir the ground and keep it free from weeds.



## CORRESPONDENCE.

### ROSE GOSSIP.

It must be a matter of sincere pleasure to all admirers of the Queen of flowers to observe the steadily increasing interest which it awakens in this country. A move in the right direction is the raising of new varieties from seed now attempted by some, and it is hoped will be by other rosarians, and that before many decades have passed we may be able to repay in a measure France and England for the many lovely members of this royal line which the patience and skill of their rosarians have produced.

As regards Rose shows, however, it is quite possible that a long time may intervene before we can present anything like those given in Europe. At the grand horticultural exhibition held in the Champs Elysees, Paris, the latter end of May last, the display of Roses was magnificent in the extreme, and one among the many points of attraction was a collection of Rose trees in pots, numbering 1800. The plants, models of health and vigor, were in full bloom, and filled the vast enclosure with their delicious odor. This peerless display was contributed by M. Leveque et fils, the celebrated rosarians of Ivry-sur-Seine. The varieties were choice, and included the principal novelties of recent introduction. Added to this were other contributions from various growers and amateurs, forming an aggregate of bewitching beauty, and which was truly a feast of Roses such as France alone can display. The capabilities of that beautiful land in this regard are prodigious, and apparently unapproachable. The French growers have offered an exceptionally large number of new Roses for 1881, one rosarian, M. Nabonnaud, presenting the extraordinary number of fifteen novelties.

Guillot fils, of Lyons, offer a new Tea of great promise, named Etoile de Lyon.

The description, which we take from the *Journal Horticole*, of Vienna, may be considered impartial. That journal says that "M. J. B. Guillot fils, the originators of that ideal Rose, La France, have in L'Etoile de Lyon, produced a worthy rival to that charming flower. It is a magnificent Rose, very large, very full, of most beautiful form, and is extremely graceful; the color is clear yellow, with brighter yellow shadings, growing deeper at the center; it is very fragrant, and gives promise of being quite hardy." The same growers have a Hybrid Perpetual, Madame Marie Bianchi, a cross between Victor Verdier and Virginale; it is described as very distinct, full and globular; lilac in color, with brighter center; very fragrant, and a true perpetual: Hybrid Perpetual Jules Monges, very large, full, and in color carmine-rose: Tea, Madame Cusin, full, fine form and quite distinct; purplish-rose on white ground, slightly shaded with yellow: Rosa Polyantha, Mignonette, the flowers, in corymbs of from thirty to forty, are quite small; pale rose in color, changing to white, and blooms throughout the season; a lovely miniature Rose suitable for borders, and is said to be quite hardy in France. The five foregoing received first-class premiums.

M. Gonod, of Lyons, sends out two: Beaute de l'Europe, a very remarkable and promising Tea Rose, belonging to the Gloire de Dijon family, and is described as very vigorous, with flowers of great size and very full; style of Centifolia; the color is deep yellow, with reverse of petals coppery-yellow. It is said to be the most striking yellow Rose hitherto produced, and has been complimented by a colored plate in the *Journal des Roses*, which, if an accurate representation, proves it to be an extremely showy flower; Hybrid Perpetual, Mad-

ame Marie Garnier, flowers large and finely-formed; color flesh in the center, the exterior petals silvery-white. This is an extra sort, and it will doubtless prove an acquisition to the somewhat limited list of white or very light-colored Hybrid Perpetuals.

Schwartz, of Lyons, offers four new Roses of his own, and introduces two grown by M. Schmitt. Of the former, Camœns, a hybrid Tea, the *Journal des Roses* speaks in high terms, and honors it with a colored plate; and this competent authority states that, notwithstanding the drought of the past summer, Camœns bloomed in great abundance from spring until the autumn, and at that date was in full flower with no signs of cessation till the rigors of winter should arrest it. This flower is above medium in size, imbricated, and in color is a very lovely shade of bright china-rose on yellow ground, with white flakings: Hybrid Perpetual Comtesse Henrietta Combes is style of Marie Bauman, large, full flower, bright satiny rose, with silvery reflections; very fragrant: Hybrid Perpetual Madame John Twombly; red, with bright deep shadings: Hybrid Perpetual Madame Jules Grevy, large and full, interior of flower salmon, shaded white, and exterior bright carmine, shaded rose; a new color and a promising sort. Camœns and Madame Jules Grevy received first-class premiums.

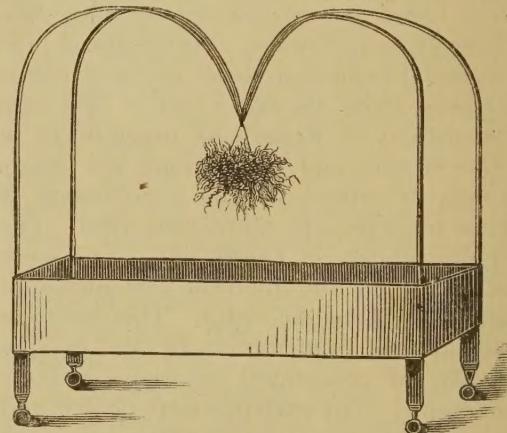
The two Roses of M. Schmitt are Hybrid Perpetual Madame Adelaide Cote, in form and bearing in the style of Sénateur Vaisse; very large and full; color showy crimson, with intense glowing shades mixed with black in the center: Noisette Caroline Schmitt; salmon-yellow, changing to yellowish white; a perpetual bloomer.

M. Moreau-Robert, of Angers, offers four novelties, among which is a new Perpetual Moss, named Mousseline, described as very strong and vigorous; flower large, very full, opening well, and from pale rose turning to pure white; a true perpetual bloomer. The same establishment sent out the perpetual Moss, Blanche Moreau, last year. They also offer the Hybrid Perpetual, Archduchesse Elizabeth d'Autriche, a fine, large flower, clear satin-rose, and extremely floriferous: Hybrid Perpetual Madame Yorke, vermillion red, shaded with carmine and blackish-purple; on the whole a very

original and useful coloring, and Hybrid Perpetual Albert La Blotaïs, a fine globular flower, medium size, velvety-black shadings, with glowing, fiery tints; a prolific bloomer.—F. LANCE.

#### A WINDOW GARDEN.

MR. VICK:—I had a window garden made to order, last summer, and which proves to be very satisfactory. It consists of a pine box as long as my window is wide, eleven inches in depth and ten inches in width. The pine "stuff" used in making the box was half an inch thick, and it was securely screwed together at the corners. This box was oiled and then trimmed round top and bottom with imitation black walnut moulding; mounted sufficiently high on legs furnished with castors to raise the top of the box a few inches above the window sill. The whole box was then varnished. The bottom of the box was perforated with holes, to secure good drainage. Thus far, of course, my box is like every one's box for holding plants, but now I wanted to secure a light, firm trellis, and support for a hanging-basket, that should do away with the



necessity of training vines around a window casing. To this end I had about thirty feet of quarter-inch iron rod cut in two. Each of the pieces fifteen feet long were first bent so as to form an arch over the box, and then the two arches were welded together for about two feet in the central part of the arch, and then this welded portion was bent down about eighteen inches below the highest point of the arch. The four ends of the rod were then securely fastened to the four corners of the box on the inside. The engraving of it here shown will assist in making my description understood.

To each end of the box, on the outside, about four inches below the top, I had a shelf, twelve by nine inches, fastened by means of little brackets at each side, and a brace from the bottom of the box to the middle of the outside edge of the shelf. On these shelves were placed boxes planted with German Ivy and Madeira Vine. Of course all the readers of this MAGAZINE understand that the best results can be obtained only from young, vigorous plants that have been rooted about midsummer. The boxes at the end and the rods may be painted a dark brown, and either a hanging-basket or a bird cage suspended from the crotch in the central depression of the arch. The effect produced by the thrifty, large-leaved plants in the box, growing as plants seldom grow in pots, the arch wreathed and covered with the glossy green vines, and midway between a hanging-basket with drooping vines that nearly brush the flowers below, and which yet spare a few tendrils to creep up the strings and salute the vines above, this effect, I say, is worth striving for. Then, when it is considered how much easier it is to care for plants and vines in this way than by pot-culture, the possibility of rolling the whole thing out doors on a bright day and showering the vines, which could never be treated to such a luxury if they were fastened to window casing, and, withal, the simplicity and cheapness of the contrivance, it would seem that many might try some such plan. My dream is next year to fill the box with flowering Begonias, and I want to improve my hanging-basket a little. I would be glad to hear from some one's practical experience what plants are best adapted to giving long tendrils, with fine foliage, and, if possible, a few flowers. A variegated foliage would, however, be preferable to the flowers, in my estimation.—MICHIGAN.



BACTERIA AND THE YELLOWS.—In one of the agricultural journals H. E. BIDWELL, of Wayne County, Michigan, says that "bacteria are found in budded and innoculated trees three years before the tree dies with the yellows, and in budded trees two years before you can discover any outward appearance of its existence." The last clause of the sentence quoted is important if substantiated; can Mr. BIDWELL satisfactorily prove it?—S.

#### ADAMIA VERSICOLOR.

The various colored, or changeable, Adamia, *Adamia versicolor*, is a dwarf, evergreen, greenhouse shrub, with smooth branches and opposite, oblong, lanceolate, serrate leaves. It is a native of China, from which country it was introduced, by ROBERT FORTUNE, in 1844. It first flowered in England, in the gardens of the London Horticultural Society, in September, 1846. Mr. FORTUNE describes it as "growing on the Island of Hong Kong in the ravines, about half-way up the sides of the granite mountains, where it is deluged with torrents of water, and forced by a vehement heat into luxuriant growth; at that time it must be exposed to as much as  $120^{\circ}$  of direct sunshine, while ripening its wood, and afterwards it must endure a temperature of  $40^{\circ}$  until the rains and heat return, and once more force it into vigor. All this must be done with an abundance of air, for it is continually exposed to violent gusts and storms of wind, which struggle with a burning sun, and must depend for its food upon what the air can bring it, and upon such saline matters as may be yielded to water by the decomposition of the granite soil."

To a person who has had but little experience in the cultivation of plants, the above brief notes afford a great deal of useful information concerning the proper treatment of this beautiful species, and if all plant collectors were to adopt a plan somewhat similar to the above, they would give us much valuable information concerning the proper treatment of the plants they discover and introduce. The flowers of this Adamia are produced in pyramidal, downy, terminal panicles. In the bud state the flowers are almost white, gradually changing, as they expand, into a bright violet-blue. When fully expanded, the single flowers measure almost an inch in diameter, so some idea can be formed of their beauty. In appearance the plant has somewhat the habit of a Hydrangea. It flowers during the autumn months. Propagation is effected by cuttings, and, as the plant is of rapid growth, young plants, if liberally treated, will soon form fine flowering specimens.

The Adamia is a plant most easily cultivated; it requires good drainage, plenty of pot-room for its roots, a compost composed of two-thirds well-rotted sods and one-third well-rotted manure or leaf-mold

well mixed, abundance of water during its season of growth, with a weekly watering of liquid manure. The most preferable mode of treatment is to turn the plant out of its pot or tub about the first of May, repot it, and, if deemed necessary, place it in a larger pot or tub. The pot should be so placed that the plant is fully exposed to the sun (if in a pot the pot should be plunged) when it should be abundantly supplied with water and every means used to induce a luxuriant growth. On the approach of frost the plant should be removed to a light and airy part of the greenhouse until it has ceased flowering, when it may be removed to a cool, dry cellar, or placed under the stage of the greenhouse, care being taken to keep the plant from becoming too wet, for, if allowed to become too wet, it will rot.

The essential requisites in the culture of this species are to keep the plant cool and dry during its season of repose, to use all means to induce a luxuriant growth during the summer season, and to keep it in a light, airy situation when about to bloom. When well grown, the panicles of flowers are from eight to ten inches in diameter. The generic name was given in honor of Dr. JOHN ADAM, of Calcutta, and the specific name in allusion to the various changes in color which the flower-buds and flowers undergo.—CHARLES E. PARRELL, *Queens, L. I.*

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#### A HANDSOME SELAGINELLA.

To those who appreciate beauty of form in plants, no apology will be necessary for the introduction of the present subject. It is one of those plants which, when thriving well, do not require us to wait six months, more or less, before we can see them in their full beauty; but by gracefulness of outline and delicacy of tint and texture, make their silent appeal to our admiration all the year round. A Fern or a moss looks as dejected and miserable as a plant can when not in vigorous health; indeed, the beauty of all plants grown specially for foliage depends on good health.

*Selaginella Martensii*, the subject of this writing, is known to botanists as *S. formosa*, and the name, meaning fine or handsome form, is very appropriate. This plant is a native of Mexico, and, therefore, likes a rather warm greenhouse or room

to grow in. A good compost for this plant, as also for almost any moss or Fern, may be made of equal parts of decomposed leaves and sods, with good, sharp sand added in the proportion of one-sixth in bulk of the whole. A seed-pan three or four inches deep and ten or more in diameter is a good thing to grow *Selaginella Martensii* in, as it is a half-creeping variety. Drainage is of the first importance, for, although it likes plenty of moisture, the water must drain away readily and never become stagnant. If pots are used, place a piece of broken pot, hollow side down, over the hole, and an inch or so of smaller pieces on that, then some of the roughest of the soil, which should be well broken, or chopped, up, but never sifted, and then the plant may be placed in and filled around it, with the soil made moderately firm, within half an inch of the top of the pot. If a pan is used, a good bottom of potsherds over the



hole and an inch of rough soil will be sufficient drainage. Water should not be required immediately on repotting; it is better to water a plant well before the operation, and have the new soil moist, but not wet enough to adhere to the hand, then a plant will not require watering before the second or third day after repotting, by which time the new feeders of the roots will be ready to work. When established, give the plant good waterings when required, not just moistening the surface and leaving the soil below dry.

If these directions are followed as to soil and potting, and the plant kept in an atmosphere not too dry, and from 55° to 60° at night, and warmer during the day, *Selaginella Martensii* will be satisfied, and those who care for it will be gratified.—B.

**RIVINA HUMILIS IN TEXAS.**

I have found growing in the Brazos river bottom a plant that I know must be *Rivina humilis*. I admired it, but supposed it was an annual until I saw it among a collection of hot-house plants in Galveston. The lady who owned the plant said she did not know the name, but had purchased it from a florist. It was identical with my little wild plant. The root is tuberous, the leaves are delicate in texture, and in shape like the catalogue engraving of *Rivina*; the flowers are small and white, and in delicate racemes; the berries are small, a clear scarlet, and



RIVINA HUMILIS.

very ornamental. The plants are a foot or more in height. I would urge upon the flower-lovers of the South to go into the woods near them and they will find growing plants that, in catalogues, are described as hot-house plants. Take these wild plants, pot them and give them a place among your house-flowers, and you will have beautiful specimens, for which you may find names in the lists of some enterprising florist, and for which you would have to pay money that might be expended for a rare Rose. I potted several of these plants late in the fall, and for some time they were quite pretty, but the shock of moving them from native woods was too great, and the bushes withered and looked so ugly I cut them down and set the box and pot on the edge of the gallery. Recently the plants have commenced putting up fresh shoots, and from one root I see four distinct shoots starting, each of which will make a bush equal to the one I cut down. It may develop into a good bedding plant in this climate. It certainly would do well

in a cool room if it grows so well on the gallery. It only seems to need protection from frost.—A READER.

**NOTES ON GRAPE CULTURE.**

MR. VICK:—Fifteen years ago I planted Grapevines. I digged about them, I manured them, and for twice three years unsuccessfully sought fruit. I did more; I fertilized with composted, and with green manure, put ashes on one, gypsum on another, and went the rounds with bones, phosphates, lime, and salt. I gave deceased hens, lambs and cats the benefit of sepulture near the roots. I pruned, I left “unslashed,” and then, I thought, did most everything but gather Grapes. When near despair, I appealed to PURDV, whose creed is given in a still, small voice. The honest and apt Quaker diagnosed and pronounced, dyspepsia. But a less nutritious diet gave not what I wanted—Grapes.

At that time Grape-culture in this locality was in its infancy, and the fruit was generally grown on neglected vines. But outside of this, my native town, I found a locality in which the soil was sandy, where each vine was annually loaded with fruit. The only result of my questioning and reasoning was that my soil was not adapted to Grape culture. Although it is not heavy, the admixture of it and common plaster-sand of rather a fine grain around the roots of the vines gave me Grapes; and now, when transplanting vines, sand is one of the essentials in making beds in which to put them. This is an illustration of the remark in an article in the last volume, that “a warm and well-drained soil is needed to grow good Grapes;” but to me it has been an elaborate job to draw it from my own experience.

While it is as true of the Grape as of anything else in the vegetable or the animal kingdom that growth can be obtained only by furnishing food in unstinted quantities, yet, I think it far better to make the soil only moderately rich at planting, and afterward to annually apply fertilizers, such as well-rotted stable-manure, bones (the smaller or the more finely broken the better), ashes, and superphosphates; accomplishing by this plan the twofold result of furnishing plant-food and cultivation, the latter being very essential, and weed-growth must be prevented. Deep

tillage and the application of manure below the soil, that is, in the subsoil, have in every instance been ruinous with me. Eight or ten inches is as deep as I now put any fertilizer for Grapevines. I was led to adopt this practice by planting half a dozen or more vines at different times in three old hot-beds. These vines included two Concords, two Crevelings, one Delaware, and one unknown variety, that were, each, one year old or older, besides several vines grown from cuttings that were allowed to remain in the hot-bed when propagated. Not one of these has ever produced a good bunch of Grapes, and the few living vines are making a feeble growth. Deep tillage may be desirable in New York, but it is not in central New Hampshire.

If I can attend to it, each shoot is nipped off at the second joint from the cluster just as soon as the buds show themselves, and all lateral shoots are rubbed off from these and all other canes where not wanted. Economy in the vitality of the vine will be obvious.

The rose-bug, or rose-chafer, had been attracted to our garden by a plenitude of Roses, and after devouring everything acceptable to its ravenous appetite, the males died and the females entered the ground, laid their eggs, came to the surface again and died. The eggs hatched about three weeks after, the larvæ fed on the tender roots and, in mid-autumn, went into the earth below the reach of frost, came up again in spring and were transformed into beetles, and late in June or early in July they "swarmed" and could have been "hived" from the Rose bushes in countless numbers. For years and years they had done this, and by the time I got to growing Grapevines the swarms were pretty good-sized ones. We picked, jarred the nuisances into pans of hot water, covered the vines with mosquito netting, but had several prospects for a bountiful yield of Grapes destroyed before an effectual preventive of their ravages was found in the Grafton mineral fertilizer. Since that happy discovery was made, the Stevens mineral fertilizer, gypsum (plaster of Paris) and air-slaked lime, have proved equally good and less expensive preventives of the rose-bug's consumption of Grape blooms.

When the forerunners of the rose-bugs make their appearance not a moment

should be lost before applying some mineral powder to the Grapevines when wet. If no dew is on them, thoroughly wet each leaf, and especially each cluster of buds, bloom, or Grapes, by throwing a small quantity of water up, through, and down over the vines before applying the powdered dust in the same way. Any of the above-named minerals will prove efficacious if seasonably applied, but, after commencing his feast, the rose-bug is little disturbed by anything milder than nitro-glycerine or dynamite.—ROBERT, Pittsfield, N. H.

#### A PERENNIAL GARDEN.

MR. VICK:—The New Year came in brightly, and "Happy New Year" was echoed on all sides. But as days crept by I missed something; there was some pleasure the old year gave which I found wanting in the new. What could it be? Looking one day at my Cactus, covered with its scarlet blooms, I wished with all my heart that Mr. VICK could see it, and then I remembered my MAGAZINE. Ah! that was the missing link. Now the new year would be complete. The MAGAZINE arrived a few moments ago, prettier, brighter, sweeter than ever. One can almost fancy the perfume of flowers lingers among its leaves.

I will tell you something that will be very surprising to the readers in your vicinity. I have now several plants in the garden uninjured by the winter; such as Petunias, Salvias, and Verbenas. Think of a bouquet of Verbenas in January! I wish to tell you of the Cactus which grows wild here, commonly known as Prickly Pear. It covers quite a large space of ground, and seems as if it had been thrown down; one leaf is piled upon another until it resembles a mound. The fruit is ripe at this season, and is considered quite nice by some. It lives all through the winter, as do many of our wild plants.

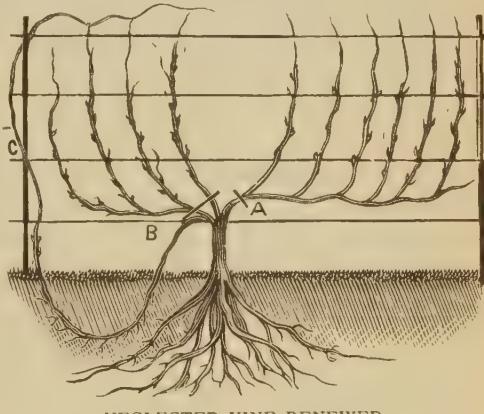
There is at all seasons something pretty and interesting to be seen in our woods. I often wonder if the northern woods are half so pretty. Won't some northern writers please tell us about their woods?—B. A. T., *Mistletoe Vale, S. C.*

WILD GOOSE PLUM is not proving valuable. It is a poor bearer, the fruit falls, and it is worthless when grown.

## RENEWAL OF GRAPE VINES.

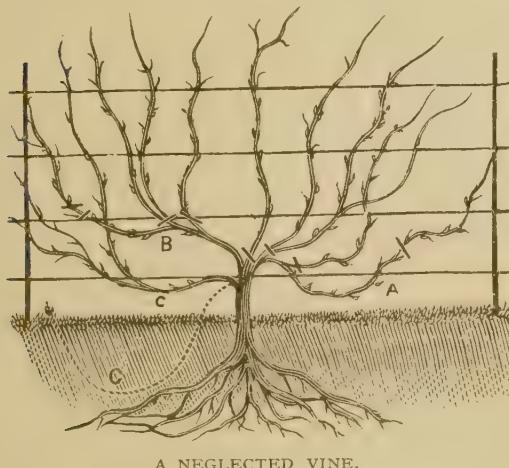
The question is often asked, can an old neglected Grapevine be renewed; if so, what is the best manner in practice among grape growers to produce the desired result? I take this to be an enquiry, whether a new and thrifty Grapevine can profitably be produced from and in place of a poor and neglected one. It can be done, and time may be gained over resetting with a new, young plant, and this too, even though it should be desired to change the variety, which may be done by grafting. From my own observation and experience, which I believe will be corroborated by other grape growers, I consider it a fact that it is impossible to replace successfully and profitably an old plant that has been long on soil devoted to vine-growing with a new, young plant. A young plant can be placed in the position of an old, worn out vine; it could live, but its growth would be too slow for profit unless accompanied with greater cultivation and more fertilization than the success and value of the plant would warrant. The feeble growth in these circumstances is in a great measure due to the numerous insect and fungoid pests, which always breed and accumulate in old plantations. Supposing the reader to be the unfortunate possessor of a few neglected vines, and wishing for their

take the cane c, which is understood to be one-year-old wood, or the growth of the previous season, and bury it deep in the ground as possible, in the manner shown in the cut by the dotted line c, but not going below the hard pan, and allowing two buds to appear above the surface of the ground. The next opera-



NEGLECTED VINE RENEWED.

tion is to prune off all wood from the vine except the canes A and B, leaving six fruit buds on A, and four fruit buds on cane B. Only one cane should be allowed to grow from the layer during the following season. After one season's growth the vine will appear as is represented in the second illustration. In the succeeding season prune off all of the old vine at A and B, and the layer at c, leaving six to ten fruit buds on the cane, according to the strength of the plant. Now there is a strong young plant, with the extra assistance of the whole strength of the old root to aid it, making it many times stronger, and thus overcoming all the difficulties that would hinder or destroy an independent young plant. If it be desirable to change the variety of the Grape, graft the layer the spring of the second year by the ordinary tongue graft, using no wax, but packing the soft dirt well about the scion; leave the top bud of the scion about an inch under ground, and prune the vine again in the same manner as the previous year, using the canes nearest the stock on each side to form the arms, one with six and the other with four buds, the latter being on the same side as the layer. The old stump and root may be removed at any time desirable after the third year. Let me call the attention of the reader to the importance of careful, thoughtful pruning—it will do more to ensure success



A NEGLECTED VINE.

reconstruction, I give the plan for laying or renewal that I have followed successfully in my own vineyard experience. In order to clearly illustrate my method, engravings have been prepared, showing an old neglected vine, and the same vine in the first stage of renewal. Early in spring, before the buds open,

than cultivation. Prune carefully first, afterwards cultivate. So much has been written and said on the question of pruning, that people have come to think it almost beyond ordinary comprehension. The many different methods advocated are but the opinions of many different persons, all aiming at the one object, but differing in methods and correspondingly in results. The one object of pruning is to keep the vine in a thrifty, healthy condition from year to year, by removing all of the superfluous growth of wood. The true method, and the one I try to follow, may be figuratively described as an ounce of good judgment combined with all the experience one may have at command. A vine to be profitable must be pruned so as to be able to ripen and mature perfectly the greatest amount of fruit without the vine sustaining injury, as it will, if over-loaded; and to determine the capacity of the vine, we have the result of the previous year. If the growth of wood is short, and the canes spindling and have not attained a proper length, that is, mature, before frost, which is about an average of three feet, the vine has been over-loaded, and fewer fruit buds by at least a third should be left; so, also, if the vine has made an abundant growth of wood, we may know that a greater number of fruit buds may be added for the following season; for it is reasonable that a healthy and strong crop of wood can produce a large crop of fruit.—EDW. P. SNELL, *Rochester, N. Y.*

#### FLOWERS AND GOOD CITIZENS.

Has it ever occurred to all of us that, in filling the mission it has chosen, this MAGAZINE is accomplishing a far higher and nobler purpose than the cultivation of flowers? The following illustration may be sufficient to make the matter plain: Where no cultivated flowers bloom in summer, where no plants grow in winter, there, as a rule, you will find the young folks absent during the evening. But it is the exception to find the boys preferring the village store boxes to chairs in the cozy corner at home, where a few house-plants are grown, and neat and bright monthlies and papers are received and read.

The ennobling and refining effect produced by a love for flowers is sure, at

some time, to generate a corresponding desire for a pleasant home. Expense does not always make a house attractive, nor does wealth certainly or usually bring content. But where you find the young members of the household frequently devising plans for beautifying the home, especially at a limited cost, there you are pretty certain to find other worthy qualities developing which will make the world better.

If the home is unpleasant and uninteresting, small allurements will lead the young away from it, and frequently into a downward path. Among my acquaintances has never been found one who thought he knew too much or was too good, but on the other hand the regrets for the opposite qualities have been frequently expressed. Every word has some effect on a child; his mind is plastic and he usually creeps before he walks, whether going towards rectitude or destruction. Encourage and lead, but never drive him into goodness. A child craves entertainment and activity, and unless his mind is furnished with what is now called "a perfect food" he is going to get something which is likely to rear anything but an exemplary citizen.—ROBERT, *Pittsfield, N. H.*

CAMELLIAS.—A professional florist here has a very fine plantation of Camellias in his hot-house, some of them 70 years old, and thrifty as ever. They are planted in the earth, in peat. He gets about 9,000 blossoms one year, and 6,000 the next. He has so good success with Smilax, that he fills large orders from Philadelphia, where the plant is sold as "Boston Smilax."—M. R. S., *Newtonville, Mass.*

STAPELIA AND CACTUS.—In the December MAGAZINE, R. A. S., Hood's Landing, Tenn., says persons err in giving Stapelias and Cactus the same treatment. Will he please give, in this JOURNAL, his mode of treatment for Stapelia, and also state whether the smooth, flat-leaved Cactus should have the same treatment as the other kinds.—MRS. R. S. H., *Nauvoo, Ill.*

JAPAN EUONYMUS IN KANSAS.—A lady in Labette County, Kansas, writes, that she has a plant of the Euonymus Japonica that is "four years old, three feet high, and perfectly hardy."



### BIFACIAL ORANGES.

The *Gardeners' Chronicle* says: "In the *Province Agricole*, M. HECKEL tells us how the fruits which on one side present the characteristics of Oranges, and on the other those of Lemons, are produced. A nurseryman at Cannes, M. TORDO, takes scions (*bourgeons*) of various species of Citrus, Orange, Lemon, &c., and grafts them circularly around the trunk of a Citrus, arranging the scions closely together in pairs, so as to bring about complete fusion of the scions. When the grafts have adhered, the trees are headed down to within a short distance of the grafts, and in spring branches are seen which give rise to monstrous fruits, having the characteristics of the different grafts blended together. The branches which originate from the ungrafted shoots produce leaves which are greatly changed in form and differ from those of either species, thus affording a striking proof of graft-hybridization. The flowers of the two species are also fused."

The above is a very strange story, and especially strange to be related by a journal of the character of the one from which we quote. In the first place, the translation from the French source is wrong, for what is meant by *bourgeon* is bud, not graft. If the words scion and graft were not employed so frequently in the above extract, it might be thought that their use was unintentional, and that the operation of budding was understood, though not so expressed; but the frequent use of these words and the description altogether of the operation leave no doubt of the thought in the mind of the writer. Any one skilled in grafting, or one having a fair acquaintance with vegetable physiology, knows the impossibility of the result claimed. But when it comes to splitting two buds of different

varieties and joining two half-buds—one half-bud of each variety—the operation is apparently different to a mind uninformed upon this subject, and is regarded in somewhat a mysterious light. Essentially there is but a slight difference in the physiological result that might ensue if two half-scions or two half-buds were successfully united in growth. The idea upon which the claim here made is based is an old fallacy, often promulgated, but with a single exception recorded in the journals of this country a few years since, there never was an instance of joining in growth two half-buds sufficiently well authenticated to be worthy of any consideration whatever. In regard to the exception mentioned, the proofs were strong but not infallible, nor unquestionable, and as the claim has not been since made for a second operation of the same kind the probability is that the party who made that single claim has since abandoned it.

In conclusion, in order not to be misunderstood, we need only to say that the whole story, as told, is, in our opinion, using an expressive French word, a *canard*.

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### FERNS AND THEIR USES.

A writer in *Gardening Illustrated* reminds us of the very general cultivation that Ferns receive in England; with us their culture is yet exceedingly limited, but there they are employed for all manner of plant decorations, such as forming a background for the display of flowering plants, or as individual plants for their own grace of form, contributing to the display in the stoves and greenhouses, and conservatories, and as ornaments to the dining-table—bits of the fronds are worked into bouquets of all kinds. "Who would think," says this writer, "of making up a bouquet or dressing an epergne



ADIANTUM GRACILLIMUM.

or vase without a spray or two of Maiden Hair, the demand for which in the market almost defies calculation."

The number of species and varieties of Ferns that are raised for all the various purposes to which they are assigned is very great. In some private gardens a large house, and sometimes more than one, is devoted entirely to Ferns of various kinds. The hardier sorts are raised out of doors in what are called hardy Ferneries, where rocks are arranged as effectively as possible in imitation of natural scenery, with water and shade to suit the wants of the plants. Hardy flowering plants that are suited to the same conditions are often associated with them.

"The most choice for bouquets," quoting again from the writer mentioned, "is *Adiantum gracillimum*, the fronds of which are somewhat smaller than those of the normal type, and the leaflets more minute. The one I like best for working in among flowers is *A. Capillus-Veneris*, the tips of the fronds of which, just peeping out, are most charming, as are, also, those of *A. setulosum*, which form a capital background for two or three flowers to wear in the button-hole, their shape, size, and spread just fitting them for the

purpose. This variety looks well in a small wire basket or perforated Cocoanut shell, through which the fronds find their way, and produce a very pretty effect. Like all the foregoing, it does well in a greenhouse temperature. The boldest of the *Adiantums* is *A. Farleyense*, the color of the fronds of which is unique, varying in tint according to age." "For dressing epergnes or large glasses, *A. tenerum* and *A. concinnum latum* are the most striking, but to be durable when so used they must be ripe."

For the same purpose are also mentioned *Onychium lucidum* and *Pteris serulata*, and *Pteris cretica* and its variegated form, *albo-lineata*.

"*Pteris scaberula* is a great favorite with many, but, beautiful as it is as an ornamental object in pots and baskets, I do not care for the fronds when cut, as, although finely divided, they are not loose and open enough. The habit of the plant, however, renders it peculiarly adapted for running and trailing over the edges of rocks, or the sides of pots or pans suspended, conditions under which it is seen to advantage. Another elegant Fern that it is most desirable to cultivate for the sake of its fronds for cutting is *Davallia tenuifolia*, which is something after the

manner of *Onychium lucidum*, but is even more striking and beautiful than that well-known kind. The foregoing are the best Ferns in a cut shape."

Those of our readers not acquainted with *Adiantum gracillimum* may be interested by the following poetical description of it written by a very practical English horticulturist, Mr. W. G. SMITH: "This Fern has been not inaptly compared with a small and elegantly refined fountain covered with pellucid drops. If such a Maiden Hair Fern could ever have its spray-like fronds associated with a maiden at all, it would be the 'Maiden of the Mist' in Sir WALTER SCOTT's *Anne of Geierstein*, or, better still, the exquisite 'Undine' of DE LA MOTTE TONGUE. Compared with other *Adiantums*, it is in its parts the smallest of the small, with an elegance and refinement it is impossible to reproduce in wood engraving. If *Adiantum Farleyense* is like the growl of the drums when the terrible one-eyed giant is announced in HANDEL's 'Acis and Galatea,' then *A. gracillimum* is like the innumerable, endless, tinkling mid-summer-night's fairy bells heard in MENDELSSOHN'S 'Wedding March.' Its fineness is like the fineness of some grasses, as *Briza minor*, but combined with a lightness, elegance, and emerald transparency never yet possessed by any grass, or, indeed, any Fern other than *Adiantum gracillimum* itself."

#### DWARF SCABIOUS POT-GROWN.

That interesting annual, the double, dwarf Scabious, is destined to receive more attention than heretofore. It has been successfully tested in England as a pot-plant for autumn and early winter flowers. An exhibition of pot-grown plants was made last autumn at a meeting of the Royal Horticultural Society that proved them to be very desirable, and indicated their extensive use for the purpose above referred to. The *Gardeners' Chronicle*, in giving an account of this exhibit, says: "The seed is sown about the middle of July, and the best and strongest plants are selected for potting, and are placed first in 60, then in 32, and eventually in 24-sized pots, and being treated to good soil and well looked after they grow into bushy specimens, and, at the blooming period, throw up successively a large number of flowers.

There is no 'coddling,' and 'those who attempt to grow these Scabious in pots should carefully avoid it. During the summer the pots are plunged out-of-doors in a bed of Cocoa-fibre, or some such material, and well looked after in the matter of watering, and the plants are not housed till some protection is necessary. Unless it is desired to expand some of the flowers quickly, it is not wise to give them a strong heat; a house from which frost is excluded is sufficient in mild, open weather, but during frost or cold rain a little fire-heat is necessary. One characteristic of the dwarf Scabious is especially noticeable, that of throwing up successional flowers in great abundance.' It was noticed that some of the flowers were finer than any ever seen in the open ground. Plant-growers will be pleased to add the dwarf Scabious to their stock of autumn-blooming plants, on account of its pretty and abundant flowers, and especially since it can be so easily reared.

#### FERNERY FOR A ROYAL PALACE.

The *Journal of Horticulture* makes mention of a London firm having "ready for shipment some very handsome designs in cork for a fernery in the King of Siam's palace. The principal portion consists of five frames, each about ten feet in height and width, most artistically constructed, being covered with cork colored to resemble a true rockery, with a pool at the base for Water Lilies and other aquatics, with numerous pockets and recesses in which Ferns will be placed: Several jets of water are arranged so that the whole surface will be constantly moist with water dripping from the stalactitic projections at the upper part. Spaces are left at the back which are to be filled with mirrors; and as each of these artificial 'rockeries' will occupy an alcove, and the five will be disposed in one line, the effect when they are fully furnished will be magnificent, and probably, in its kind, unrivalled."

**ANNUALS FOR WINTER-BLOOMING.**—The following varieties of annuals are mentioned as having been employed at Kew for winter flowers: Scabious, *Centaurea cyanus*, *Phlox Drummondii*, *Tagetes*, *Linums*, *Schizanthus*, and *Mignonette*.

## SOMETHING LIKE A ROSE.

A plant of the Hybrid Perpetual Rose, La France, is described as having produced, the last season, eight hundred and eighty-five blooms. The plant was trained out flat on the wall of a cottage, and covered a space of twenty-five square feet. The plant commenced to bloom on the 5th of June, "and now, December 18th," says the writer in *The Garden*, "there is a fully expanded flower and several buds in various stages of development. It has scarcely ever been without a flower during the whole period, and many of the blooms have been perfect show flowers; so grand, in fact, as to arrest the attention and create the admiration of every passer-by. The occupier of the lodge being very fond of Roses, the plant, no doubt, has had many a bit and drop of good stuff, and much careful attention. The result is as above stated, and it is well worth recording." Although the manner of training adopted with this plant would be advisable in very few places in this country, the instance is no less instructive, and equally as good results could probably be attained with the bush form under as skilful management.

## FRUIT IN JAMAICA.

We learn that the amount of fruit raised and offered for shipment to this country, in the Island of Jamaica, is rapidly increasing. Oranges and Bananas especially are being produced in great abundance, and the resources of the country for raising them are immense. Already more fruit is offered for shipment than the capacity of the vessels trading with this country can accommodate. One steamer alone is reported lately to have "shut out three thousand barrels of Oranges beyond her cargo." The principal port of shipment is Kingston. The Jamaica Banana is so much better than the principal variety cultivated in Cuba that the Cubans are now introducing it in large quantities.

A LARGE ADIANTUM.—A plant of Adiantum Farleyense is described, by the London *Garden*, as measuring six feet in diameter and a little over eighteen feet in circumference. The pot it was growing in was two feet and a half in diameter.

## ORCHARDS IN ENGLAND.

The planting of orchards is now receiving much attention in England, and the *Gardeners' Chronicle* says: "Many an acre of wood, hop-garden, pasture, &c., is being converted into orchard, in the belief that fruit-growing is one of the best objects to which capital and labor can be employed in these days of agricultural depression." We have noticed, for the past two or three years, what has been said on this subject in the English journals, from Premier GLADSTONE down, and it is evident that the English agriculturist is taking counsel in this matter of his fears and his hopes, more frequently the former, rather than from reliable statistics gleaned from the whole country. Looking back over the past and recounting the history of British orchards, the future prospect of this industry is not bright. With the attention that has been given to fruit-culture these many years in Great Britain it should now be so developed that its profitableness would be beyond doubt, if profit there is in it. It is possible that Plums and Cherries may be raised with more advantage than Apples.

AMERICAN APPLES IN LIVERPOOL.—Newtown Pippins in the Liverpool market brought, in January, over thirteen dollars (fifty-five shillings) a barrel, and Baldwins six dollars (twenty-five shillings). It is remarked that "the quality is poor this year, though there must be a few fair specimens to bring such prices. Why cannot our cousins, with their enormous range and great variety of country, get more of this admirable Newtown for us?"—*The Garden*.

MILD WEATHER IN BRITAIN.—The English horticultural journals come to us filled with accounts of the remarkable open winter; throughout the whole of Great Britain and Ireland unusually mild weather has prevailed, and in many parts the plants that usually bloom in early spring were producing their flowers during the month of January.

MARIGOLDS IN WINTER.—An English writer advises seeds of Calendula Meteor to be sown in July or August, and says the plants will bloom all winter.



## PLEASANT GOSSIP.

### CALLA AND OTHER PLANTS.

MR. JAMES VICK:—Please inform me through the MAGAZINE the proper mode of treatment for the Calla in order to force it to bloom. I purchased a Calla last spring, and was advised by friends to let its leaves and stalk die down in September and then repot it, using an eight-inch pot, and then when it commenced growing again, they advised me to place the pot in an earthen crock and pour boiling hot water around the pot containing the Calla tuber. This treatment, my friends said, would surely force the Lily to early bloom. Well, I have faithfully followed their advice, but the result is not at all satisfactory; not only has the Calla failed to show any perceptible sign of early bloom, but I much fear it will never again show bloom, early or late.

I have an Astilbe Japonica that does not seem to be doing well. I potted the root in September, and several young shoots came up from it. All through the month of November it grew nicely, but for the past three weeks it has not grown at all. Please advise me what is best to do for it.

With the exception of the two plants referred to, my collection of winter-flowering plants are all doing finely. The season has been very mild and open up to date; December 14th. My hardy bulbs, such as Hyacinths, Tulips, Crocuses, Scillas, Ranunculus, &c., are all up and doing splendidly, and one ambitious Polyanthus Narcissus (Roman White) came into bloom on the 8th instant; to-day it is in full bloom, and has that peculiar sweet fragrance of early spring about it. We have Bouvardias, Abutilons, Stevia, Chinese Primrose, Daphne odorata, Lantanas, Carnations, &c., all in full bloom; each plant so distinctly different in form and flower, but all are beautiful. The Carnation, Mrs. Henderson, is a perfect gem; we have one showing eight splendid, bright-scarlet flowers. We expect to have some Roman Hyacinths in bloom by the holidays.—I. P. C., *Green Valley, Ill.*

A healthy Calla bulb potted in good, rich soil, watered moderately until it begins to push up its leaves, and then given a constant supply of water by keeping it in the saucer under the pot, is about all the "treatment" necessary, besides keeping the plant in a good, strong light, and giving air sufficient to keep it from growing lanky. The Calla is a vigorous plant and easily raised. Many peculiar methods are adopted with it by different persons, and because the results are good in most cases, they are attributed to the unusual methods employed; whereas, in

fact, the growth and blooming of the plants are due to complying with their proper conditions in regard to soil, moisture, air and temperature, and not to the exceptional treatment, whatever that may be. The Calla is so vigorous that it will flourish in disregard of very precise conditions, if in the main they are fulfilled; hence, there is a chance for that variation in practice which is so common with those who raise this plant, and the peculiarities of which are often considered essential.

In regard to the Astilbe, no clue is given to its management. We can only say that it was potted much earlier in the season than necessary; October would have been early enough, and then it should have been kept as cool as possible for a few weeks, watering only moderately. When the plant showed signs of pushing strongly, the temperature could have been slightly increased and water given to meet its full requirements. This plant will not stand much forcing; good blooms are to be had only by cool treatment.

### RIVINA HUMILIS.

I have a Rivina with a number of seedlings from it that have come up about it. The plant has grown tall and ill-shaped. Would it be better to prune it? Does the old plant die at the end of the second year?—L. P. B., *Norwood, Mass.*

Rivina humilis is a perennial plant, and may be pruned and made to assume a shapely form, although not an erect and trim grower. The young plants can be transplanted into separate pots and reared up, if desired. Occasionally pinching the ends of the shoots while the plant is growing is the best way to bring it into the desired form; this course is far better than to allow it to grow unchecked, and then, when lanky and straggling, be obliged to use the knife, thus destroying growth that might have been available.

### CAMELLIAS AND CINERARIAS.

MR. JAMES VICK:—I have read Mr. HALLIDAY's book on the culture of the Camellia. The growing of cuttings, the grafting and inarching, all was satisfactorily elucidated, but I failed to get information from it about a system called, by the French, "marcotte." Visiting one day a greenhouse where an Italian was at work, I noticed Oleanders and Fig-trees layered. Some of your readers will probably wonder how layering of such upright trees can be effected. When I noticed for the first time that novel system of layering I could not account for it myself, as I had not the knowledge since acquired by reading your MAGAZINE. *Marcotte* is a French word meaning to *layer*. Now, an upright tree is layered in the following manner: A piece of lead is shaped into a small pot, without bottom, and with a slit on one side. This lead pot is placed over a joint, and filled with earth, which is kept continually damp; after some time, I don't know how long, roots start, and then the branch is cut off below the roots and potted. Could you tell me if this system can be carried out upon all kinds of plants; for example, can I try it on the Camellias. Experience, you know, in this line is sometimes dearly bought.

Another question. My Cinerarias sown last spring are now blooming, and are splendid. I would like to compare them with those of your last spring's correspondent. I am pleased with my first attempt; but they are called perennials. Does that mean that they will bloom a second season?—G. J. N., *Brushton, N. Y.*

The method of rooting woody branches above described is shown in the accompanying illustration, and is applicable to shrubby plants generally. Most plants,



however, may be propagated more rapidly in other ways, and as Camellias are propagated with facility by means of cuttings, as described by Mr. HALLIDAY, the method at present under consideration was not mentioned in his little book, as it is of particular value only to amateurs; these can employ it to advantage on the Camellia and many hard-wooded plants.

Cinerarias may with proper care be kept over from year to year, but as the plants give inferior blooms after the first season, and as it is more trouble to keep them over than to raise young plants

from seed, the latter course is usually pursued. If any particular varieties of Cinerarias are thought particularly worthy of perpetuating, they may be propagated by cuttings made from the offshoots.

### IMPROVING GARDEN SOIL.

The earth, or soil, in my garden is very wormy, buggy, black in color, looks something like street-scrapings; when dry it is like fine dust, and pasty when wet, like putty, or runny flour. My plants mostly go to vine or leaf, instead of flowers. The Roses look sickly; have had to cut several close to the ground to save them. I have lost a great many plants, and I think the soil the cause. The roots of the plants turn black. I manure every fall, and dig it in in the spring. Please let me know what to do to change the character of this soil to make it productive. What does it require?—W. H. G., *Baltimore, Md.*

What to do with a garden such as described, is to be decided practically by the willingness of the proprietor to make expenditures for its improvement. The question is thus resolved by two solutions, one of which indicates the best course to pursue, the other, one that will better the place, but, yet, will not develop its full capacity for production. First explaining how thorough and permanent improvement may be made, it will then be apparent how an inferior method may be employed that will give less satisfactory results. The first proper thing to do with a soil, that is "when wet, like putty or runny flour," is to underdrain it. This is to be done by laying drain tiles in lines not more than twenty feet apart and about three feet deep, with as good a fall as practicable, and connecting the lines of tiles at their lower ends with a drain of ample capacity at all times to carry away the water.

After this, if the garden be a large one, it should be sub-soiled; that is, plowed by running a sub-soil plow as deep as possible in the furrow after a common plow that has turned a furrow as much as eight or ten inches deep. The sub-soil plow should break up the lower soil so that the whole shall be loosened to a depth of at least twenty inches. In a small garden the soil may be trenched instead of sub-soiled. The method of trenching was described with illustration on page 234 of our last volume; it consists essentially in loosening the sub-soil with a spade instead of a plow.

Probably lime would be of benefit to this place, and might be applied in the

form of air-slaked quick-lime, and at the rate of a half-bushel, at least, to each square rod. The best time to apply it would be after the draining and deep-working of the soil that has been advised. It should be spread over the surface as evenly as possible, on a still day, when the wind will cause no trouble; it could be lightly forked in after spreading, or, if covered lightly with a plow, should be scattered along each furrow as the work proceeds. When the soil has been well cultivated and pulverized, it may be considered ready for planting, and without an application at this time of stable-manure, but depending upon guano or artificial manures for this crop. There would, however, be no objection to the use of well-decayed stable-manure, except that it would take a longer time and more tillage to make the soil ready for the crop. A preparation of soil such as described would be a lasting improvement, but many would hesitate to make it on account of the expense, and would content themselves with less thorough measures, costing less at the time, but making the account against them, nevertheless, in a few years.

#### CLANTHUS AND OTHER PLANTS.

MR. VICK:—Please inform me how to proceed with Cianthus Dampieri to succeed. I can hardly ever make the plants blossom. Calceolarias I cannot keep over the second year.

How shall I make a Camellia Japonica blossom? I have a beautiful plant five years old, but no flowers.—A SUBSCRIBER, *Oshkosh, Wis.*

The seeds of Cianthus Dampieri should be sown in a rich, sandy soil, with a warm exposure, and, if possible, where there is protection from cutting winds. The seed should be put in as early in spring as the ground is warm, and it is a decided advantage to assist in this by the use of a cold-frame or a hand-glass. The plant requires a long season, but, as it does not bear transplanting well, it is difficult to advance it by starting in hot-bed or house; whatever means will lengthen the season with the plant in the ground, either in spring or fall, will be an advantage, and a cold-frame is probably the readiest.

The difficulty mentioned with the Calceolarias is what we all have to put up with, since the herbaceous varieties are annuals.

The Camellia requires a cool, moist atmosphere to set and hold its flower-buds;

such an atmosphere it would not be apt to get with house-culture. One of the largest Camellia-raisers in this country expresses the opinion that not more than one person in a hundred, who attempt it,



CLANTHUS DAMPIERI.

will succeed with the Camellia as a house-plant. It would be extremely pleasant to have an account of the method of treatment practiced by any amateur, if such may be found, who has, for any considerable length of time, satisfactorily raised and bloomed Camellias as house or window plants.

#### COBÆA SCANDENS.

MR. VICK:—I have found in the MAGAZINE much to interest and help in cultivating beautiful flowers, and at the same time I am often perplexed by not knowing just how to treat certain plants. I raised a Cobæa scandens from seed which I procured three years ago. The first year it grew about twenty feet, and the second year it reached near thirty feet, but last fall it dropped its leaves and has never leaved-out since, though the vine is alive. It has been "a thing of beauty," but it looks forlorn now. What can I do for it? Last year it blossomed quite freely. I am anxious to have it live, as several persons have told me they cannot raise them, and this is the only one in town.—MISS B., *Horseheads, N. Y.*

It is a waste of time and effort to attempt to rejuvenate the plant here described. Plants that are as easily raised from seed as the Cobæa ought to be dismissed when they have done their best, as this one evidently has. Possibly with some management this plant might have been better preserved, but as it now is there is no advantage in retaining it.

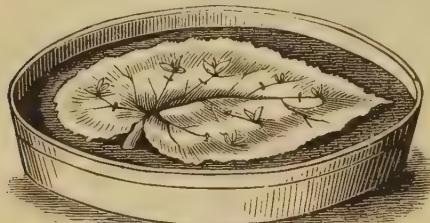
## BEGONIA-INSECTS.

Please answer in your next number how Begonia Rex is propagated.

What is the best thing to do to destroy small spiders on Fuchsias and other plants?

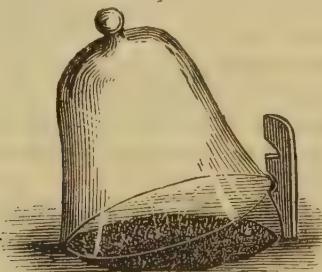
I have a large Hibiscus, but the frost has stripped it of leaves. What should be done with it?—H.C.A.

Begonia Rex, as nearly all the Begonias, may be propagated by what are called leaf-cuttings. A leaf has its stem cut so that a small portion of it remains, and this is then inserted in a pan of moist sand, and the leaf laid out flat upon the sand, its upper side uppermost. The leaf is retained in position either by two or three bits of small stone or crocks, or



PROPAGATING BEGONIAS FROM A LEAF.

what is better still, by some small pegs inserted so as to cross each other over some of the large veins. Cuts are now made in a number of places, so as to sever, or partially sever, the veins; this checks the flow of the sap, and a callous forms and throws down roots at the base of each piece of vein where severed, and just above it a bud starts out, and thus a new plant is formed. A single leaf may produce in this manner a half-dozen young plants. The facility with which propagation is performed in the manner here described depends very greatly upon the surrounding conditions. It is almost always necessary that there should be bottom heat, and it is absolutely essen-



BELL-GLASS.

tial that the air should be still and moist. It is customary to place leaves on a pan of sand, which, standing on a bed that is heated beneath, is then covered with a bell-glass, or the pan is placed in a gentle

hot-bed. The leaves that are used for this purpose should be neither very young nor very old; those that are nearly full grown and still vigorous should always be selected.

There is danger that the air under the bell-glass may become too moist, and watch should be kept and the glass tilted up when necessary to allow the escape of the superfluous moisture. A thermometer plunged in the sand on which the leaf is lying should show a temperature of about 75°.

Gloxinias, Gesnerias, Echeverias, and other plants besides Begonias, are raised in the same way. Some leaves, like those of the Bryophyllum, form buds and emit roots freely along their margin.

For the small spiders complained of, there is no better treatment than to spray the foliage frequently with clear water. This can be done without wetting the soil too much by laying the plants on their sides during the operation.

If the stem of the Hibiscus is uninjured it will push out new foliage. It will be best to shorten in the stem and branches, keeping the plant in compact shape.

## NOTES FROM NEW ORLEANS.

JAMES VICK:—All that is said of the Catalpa in your last number I can verify. I was a planter of Cotton, Sugar, and Rice from 1830 to 1863, when the fortune of war laid me low. Of the quality of the wood of the Catalpa, and of its hardness, it is needless to give instances; it grows to a great size, also. There were two trees planted in the lawn fronting my dwelling house, by my predecessors, which were three and a half feet in diameter. But there is another tree as much naturalized here as the Catalpa, which, in my opinion, is as valuable for cabinet work, &c. I mean the China Tree, *Melia Azedarach*. It will not stand the northern climate. There is a variety called the Umbrella China Tree, which, as a low, lawn tree, is surpassingly lovely, and is well named from its symmetrical top and thick foliage of deep green. The *M. Azedarach* is easily propagated from seed.

While upon the plant subject let me express the heartfelt pleasure which I, a long-life lover of plants, have received from your treasure of an Illustrated Monthly. Your plates are surpassingly beautiful.—J. C. P., *New Orleans, La.*

Our correspondent refers to the Catalpa as a naturalized tree, but there is no doubt that it is indigenous, *C. syringæfolia* growing naturally in the Atlantic Southern States, and *C. speciosa* west of the Appalachian range.

*Melia Azedarach* is a native of Syria, and favorable mention of it is frequently made by residents of the south.

## WAIT MY HEART!

Groping, groping, under the snow,  
 Wee, white fingers are reaching about,  
 Feeling for sunbeams' warmth and glow;  
 Here comes peering a cautious scout;  
 Ha! little Violet, modest minx,  
 Why did you venture abroad to day,  
 Stealing a march on the grassy pinks?  
 Back to your bed in a jiffy, I say.

Sleep till April, you venturesome child,  
 Haste and cover your head with mold;  
 Beguiling sunshine has made you wild,  
 Wait for the song of the robin bold,  
 List for the frogs at their vespers loud,  
 Wait for the babble of happy streams,  
 The thunder will come from a murky cloud,  
 And shake you out of your winter dreams.

Hark for the beat of the partridge drum,  
 As it beats reveille to the dozing brood,  
 Hear if the crow with his croak has come,  
 When the blackbirds cry in the distant wood,  
 Watch for the timid Anemone,  
 Wait till the zephyrs Arbutus kiss,  
 Then you can stand in your beauty free,  
 And nod and smile in a silent bliss.

Wait, oh, heart! for the slow, sad hours,  
 The dreary round of the cheerless days,  
 Longing in hope for the dew-sweet flowers  
 To set the world in a lovely blaze  
 Of bud and blossom, and waken the song  
 Of sweet-toned wild-bird to usher the May;  
 Winter is death, and its sleep is long;  
 Spirit of beauty, ring in the day!

—MRS. HELEN RICH.

## OLD MANURE IN A PILE.

MR. VICK:—Please answer in your next number the following: A florist told me lately that manure kept in a pile for two or three years had lost all its fertilizing properties and would be of no use except to lighten up the soil with which it may be mixed. Is that so?—H. W. S., *Cincinnati, O.*

The statement made by "florist" is pretty nearly true, especially if the pile should have been unprotected and fully exposed to the storms; the manurial value of such substance would be very small. Like leaf-mold, it would be of use to mix with heavier soil to lighten it, making a good material for tender roots to run in.

THE EVENING GLORY.—A lady friend in the south, sent me a few seeds of *Ipomoea bona-nox* last year, and only one germinated; but the harvest of exquisite flowers, white and fragrant, four and five inches in diameter, was abundantly gratifying. Hundreds of these regal beauties opening at sunset, closing at sunrise, filling the house with odor of Jockey-Club, surprised and delighted us. I planted late, and the vine blossomed in October.—H. R., *Brasher Falls, N.Y.*

## POTTING PLANTS—ONIONS.

MR. VICK:—I have a quantity of Geraniums and Fuchsias in the cellar, which I shall remove to a pit in the spring to remain until warm weather. What I wish to know is, can I, with any degree of safety, repot them at the time I remove them from the cellar to the pit? I have always deferred this until the plants have all started and made some considerable growth, but have become satisfied that it delays the blooming. I have tried severe cutting back on the Fuchsias, at or before removal, and think it beneficial, but dare not venture on the repotting without some assurance of safety. Will some one give his experience?

What would be the northern limits of the successful culture of the Italian Onions without hot-bed treatment? and, where using a hot-bed, how early would it be necessary to sow? I had decided to try them the coming season, but remembering that I seldom succeed in getting my hot-bed made before the latter part of March, am fearful that it would not be early enough to answer the purpose, still am loath to give it up. If they are milder than our Onions, as all accounts agree that they are, it would be an object for me to raise them, even if they did not begin to reach the allotted size, provided they would mature well enough to be even passable keepers.—J. M., *Kent, Ohio.*

It will be right to repot the plants mentioned when the change is made from the cellar to the pit.

To the last inquiry a strict answer cannot be given. The Italian Onions are successfully raised in Kansas from seed sown in the ground, without the aid of a hot-bed. Seed sown in the hot-bed at Kent, Ohio, the latter part of March, ought to produce fair Onions with suitable soil and cultivation.

## ROSES AND EVERGREENS.

Please to state through the columns of your MAGAZINE how to propagate Evergreens and Roses.—MRS. P. O'D.

Evergreens are mostly raised from seed. Some rare varieties are produced from cuttings; occasionally the nurseryman is obliged to resort to grafting some peculiar kind upon a thrifty stock. Millions of trees are raised from seed, comparatively few in all other ways.

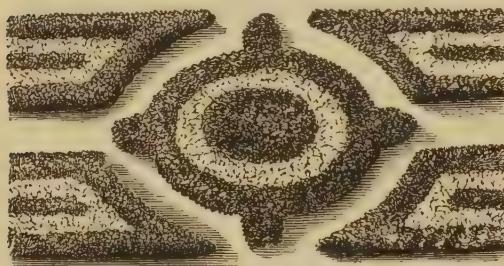
Roses are mostly raised from green cuttings; that is, cuttings of the plant while in leaf; but are also readily propagated by budding the different varieties on thrifty stocks.

BOUVARDIA ALFRED NEUNER.—It appears that this beautiful, new plant, can be propagated in its purity only by cuttings taken from the leading shoots. The plants produced in any other manner, are said to give single flowers.

## FLOWER BEDS.

MR. EDITOR:—Last year I had a number of flower beds, the forms of which I show in the drawing enclosed, filled with flowering and foliage plants. Although not bad, they were not quite satisfactory to me; and in any event I would prefer a change this season. Please suggest plants that would be appropriate, and you will much oblige a subscriber. Any suggestions will be thankfully received, no doubt, by others who contemplate making showy beds the coming spring.—W.

The present is the time to make plans for flower beds and borders, so that, when spring opens, we will know just what work will have to be done, and what plants will be needed to beautify our homes and make them attractive. In planting circular beds or borders the tallest-growing plants should always be used for the center, unless the border be against a wall, or has a background of shrubbery.



In the next row those of a more dwarf habit, or such as may be kept trimmed to the desired height, and so on to the outer edge. The drawing received shows a very pretty design of a group of beds that are very simple in construction, and that produce a very pleasing effect, and only require a little care in the selection and setting of plants.

We would suggest the following as being very appropriate. They should be planted in the order given, commencing at the center of the bed.

For the CENTER BED either of the following five selections would make a good show:

1. *Eulalia Japonica zebrina*, *Geranium Excelsior*, *Achyranthes Lindenii*, *Alternanthera magnifica*.

2. *Abutilon Thomsonii*, *Coleus Verschaffeltii*, *Geranium Bijou*.

3. *Salvia splendens*, *Geranium Queen of the West*, *Centaurea gymnocarpa*.

4. *Hydrangea paniculata grandiflora*, *Heliotrope Mrs. Lewington*, *Lantana Pluie d'Or*, *Ageratum John Douglas*.

5. *Coleus The Shah*, *Coleus Verschaffeltii*, *Golden Feverfew*.

For the CORNERS these may be used:

1. *Coleus Mrs. E. B. Cooper*, *Coleus Hero*, *Golden Feverfew*.

2. *Geranium Sir Harry*, *Coleus Testacea*, *Alternanthera spathulata*.

3. *Geranium Madame Thibaut*, *Coleus Excelsior*, *Achyranthes Emersonii*.

4. *Lantana Marcella*, *Rose Geranium*, *Cuphea platycentra*.

5. *Achyranthes Lindenii*, *Coleus superbissima*, *Verbenas*.

The corners may all be filled alike, or from two selections, in the latter case, those at the diagonally opposite angles should be alike.

## SEEDS FOR SUNDAY SCHOOLS.

MR. VICK:—You will remember that last spring I procured quite a lot of Mignonette and Sweet Alyssum seeds to distribute among my Sunday School scholars, and I promised to report to you how the plan worked.

Well, the drought interferred a good deal, but you would be surprised what an interest in flowers those seeds created, and how much good those few simple seeds did. Indeed, it was one of the best investments that I ever made. This year I have ordered four collections of Balsams, and I hope to raise enough plants from them for three hundred children. I think the change this year will add still a new interest.—J. W. P., Pa.

## TOMATOES IN ENGLAND.

We have had the pleasure of introducing into England two of the best Tomatoes grown in that country, Vick's Criterion and Hathaway's Excelsior. Mr. J. GROOM, in the last London *Garden*, says, "Vick's Criterion is one of the best Tomatoes for winter work, as it sets its fruit more freely in the short days than some of the other sorts. Tomatoes are in request all the year round, but especially in winter and the early spring months, and for keeping up a supply of them I find nothing to beat Vick's Criterion, and, for the more favorable part of the year, Hathaway's Excelsior and the Trophy."

THE DOCTOR'S OPINION.—The MAGAZINE is to ladies what soothing syrup is to babies—can't do without it. There is this difference, however, babies ought to do without their potion, but ladies ought not to do without the MAGAZINE.—DR. G.K.M.

## POPULAR LOVE OF FLOWERS.

We, who view with surprise the exhibition of wealth displayed in the gardens of England, and, with delight the floral scenes often met with in that country in cottage windows, business places, railway stations, and other unexpected spots, would hardly anticipate an Englishman thus to address his readers, as does "Wiltshire Rector," in the "Journal of Horticulture." "We are yet far behind some other nations in the general cultivation of flowers. Take, for instance, the description given by a traveler of Tunis in Africa, where now, alas! a European power is carrying on war. Speaking of the carnival there, one writes—'Not only were there, as is usual at such times, lines of carriages filled with well-dressed ladies and pretty children, but the vehicles of all sorts were filled with bouquets, and there was a perfect storm of flowers in the air. There were the boys—real street Arabs—darting in and out among the carriage wheels, picking up the fallen flowers to pelt each other; but one flower, often the freshest and handsomest, was invariably reserved by the lucky finder for his own personal decoration and refreshment. The Tunisian Arabs have a passion for flowers, and as soon as their spring commences, even the poorest and raggedest may be seen with a delicately-scented blossom stuck above his ear, the stalk resting amid the folds of his turban, and the flowers projecting forward over his dark cheeks. These people will almost go without bread to buy flowers; and there is something in the sight of a gaunt, toil-worn Arab, whose garments consist of coarse sacking and a ragged old turban, yet with a bunch of delicate spring blossoms drooping their cool freshness against his swarthy cheek, which stirs a strange mingling of sympathy, and pity, and admiration.' Such is the love of the Tunisian for flowers; may an equal love grow and prosper in the heart of Englishmen."

According to the above description, how far behind, in a popular love for flowers, are the people of this country to the Tunisians of Africa! But, many of us can look back a score, and some twice that number of years, and perceive how clearly and strongly has increased during that time the love and cultivation of plants among our countrymen. Glancing

superficially over the nations of the earth, we notice that almost everywhere the love of flowers is indulged to some extent; and, perhaps, as a rule it is less developed among the less civilized peoples because they are closer in contact with nature itself, and thus in a condition to be more easily satisfied with the wild vegetation; even as we see that where the indigenous flora is exuberant, less attention is given to cultivated plants; for it is not only in beautiful flowers that the heart rejoices, but in the verdure of the fields, the trees of the forests, the bushes and the low plants that spring along our pathway, and the mosses that cover the rocks.

And these thoughts bring to mind some that are eloquently expressed by the writer of "Modern Painters." "The earth at its surface, which human beings look upon and deal with, ministers to them through a vale of strange intermediate being, which breathes, but has no voice; moves, but cannot change its place; passes through life without consciousness, to death without bitterness; wears the beauty of youth without its passion, and declines to the weaknesses of age without its regrets. And in this mystery of intermediate being entirely subordinate to us, with which we can deal as we choose, having just the greater power as we have the less responsibility for our treatment of the unsuffering creatures, most of the pleasures which we need from the external world are gathered, and most of the lessons we need are written. All kinds of precious grace and teaching being united in this link between the earth and men. Fragility or force, softness and strength in all degrees and aspects; unerring uprightness as of temple pillars, of divided wanderings of feeble tendrils on the ground, mighty resistance of rigid arm and limb to the storms of ages, or wavering to and fro with faintest pulse of summer streamlet. Roots cleaving the strength of rock, or binding the transience of the sand; crests basking in sunshine of the desert or hiding by dripping spring or lightless cave; foliage far-tossing in entangled fields beneath every wave of ocean—clothing with variegated, everlasting films the peaks of the trackless mountains, or ministering by cottage doors to every gentlest passion and simplest joy of humanity."

### INDIANA HORTICULTURE.

The annual meeting of the Indiana State Horticultural Society, was held at Muncie, Ind., January 25th.

The meeting was interesting and helpful, the discussions and reports showing a lively interest in Horticultural matters, and many facts of importance.

Prof. COULTER, of Wabash College, read an able and interesting paper on the Flora of Indiana. About fifteen hundred plants have been found in the State. At the close of his essay he appealed to the Society to use its influence to encourage the study of botany, saying, among other good things: "It should be urged upon every School Board in the State that they place botany in the schedule of studies, 'not the dry as dust' details of text books, crammed into uninterested and overworked brains by uninteresting and inefficient teachers, but the direct acquaintanceship with the hundreds of living objects to be found on every hand, and only waiting to be cultivated to yield a thousand fold. The study thus pursued becomes not only intensely interesting, but restful and full of discipline, and if required in every school district, the next generation would be made of healthier, brighter, purer men and women, for bodies would be strengthened, intellects sharpened, hearts sweetened."

It lies within the power of this Society to create a strong sentiment throughout the State in favor of this branch of science, which can not only be studied by the greatest number, but bears directly upon the work of horticulture."

### STRAWBERRY FOR MARKET.

At a meeting the middle of January of the Pomological Society, of South Haven, Michigan, which as many of our readers are aware is in the middle of a section where large areas are devoted to fruit-growing. After a thorough discussion in regard to the best variety of Strawberry for the market grower, there was a unanimous agreement that Wilson's Albany was the most profitable for general culture. Most of the members were raising some other kinds, but none were dispensing with the Wilson's.

Some were alternating the Wilson's and the Crescent Seedling, in order to fertilize more perfectly the latter; others who had

tried them had discarded the Crescent and fallen back upon the Wilson's. Some were planting the Triomphe de Gand, and the Sharpless and some other kinds in limited quantities, but their main crops were Wilson's Albany.

### NOTES AND EXPERIENCE.

To R. A. S., of Hood's Landing, Tenn., I would say: The vine I have is *Hoya carnosa*, with thick glossy leaves, and did in one season grow over ten feet standing on the veranda, and would have done better, but was nipped back. Of course, a frame might be made to fit the growth, but the proportions would not be like the illustration that was given. To be sure, the vine might be dwarfed by nipping, but how can you have the heart to treat a *Hoya* in that manner? No, no, Mr. (yes, so I think the address must be), R. A. S.—take some other plant to form your wreath, and let the *Hoya* have a chance to form its beauty and grandeur.

Last October I had some boxes filled with good garden soil, and one with sand to use for winter planting. We moved from our summer residence in the fall too late to plant what should have been put out in autumn, therefore shall start seeds and plants in boxes in time to make good bedding plants for the spring garden. One window shelf filled with cigar boxes will give room for two hundred plants of various sorts, and as soon as they begin to crowd, I lift out some and place in larger pots. A ten-inch pot will give room and nourishment for a dozen plants that require the same kind of treatment; after a while separate again to give more room.

To plant in cigar boxes, I fill the boxes nearly full of light soil, then mark a line across the box an inch from the end, scatter the seeds ten or fifteen in the row, then mark another row an inch from the last one in the same way, and so on for different sorts. For large seeds that produce large plants with long roots, put not more than one seed in a place, two inches apart in a large pot, and let the plants remain until time to place in the garden, or in separate pots. These minute directions seem unnecessary to experienced florists, but I am often asked by visitors to explain my management of young plants and small seeds. The MAG-

AZINE is charming, and I would rather do without almost anything than that.—MRS. ROSINA A. HOLTON, *Smithville, Ill.*

#### OUR HUBBARD SQUASHES.

We had fought the annual battle with the black squash bugs, had gained the victory, and were resting quietly on our laurels, dreaming of delicious Hubbard Squash in winter, when, one morning, we were rudely awakened from our reverie by finding the vines wilted and apparently dying. Investigation revealed the cause of the trouble to be a large, white grub, working in the vine just above the root. The case seemed so hopeless, that I at once decided on heroic treatment, and, cutting open the vines with a sharp pen-knife, removed the grubs, large and small. As some of the vines were nearly eaten off, we covered them with earth. In a few days, finding they were rooting from the nodes, we pinned them down, and soon had the satisfaction of finding them well-rooted and once more flourishing. A few of the vines required a second operation, but on most the first was successful. We applied chloride of lime to a few, but are not prepared to say that it did any particular good, though it, apparently, did no harm. So we gained a second victory over our foes, and succeeded in raising a very good crop of Squashes. Our dreams have been realized, and we await the coming summer, strong in confidence of our ability to dispose of our enemy before he creates such havoc as he did last season.—F. B.

#### AN EDITOR'S GARDEN.

On examining the GUIDE last spring, I became very much interested on the subject of floriculture, and selected about fifty-five varieties of flower seeds, and then, after examining the bulb and plant department, I found so many things that I "must have," that I invested ten or twelve dollars farther. You will be surprised to hear that I have very little time from business. I went to work, however, —made a hot-bed, sowed the yard with blue grass, spaded up a dozen or more flower beds out of the prairie sod, and put in my flowers. As I had never had any experience with flower-growing, you may imagine with the little care they had some of the more delicate kinds never

came up, and those that did had a hard time of it in the unrotted soil. If I had expected much I might have been disappointed; but, as it was, I succeeded far beyond my anticipations. I had some beautiful flowers. My grandiflora Petunia, Vick's Japan Cockscomb, large double Pinks and Balsams, and truly magnificent Dahlias, Gladioli and Double Tiger Lilies, were the subject of universal, admiring comment. Flower-growers of this community were quite enthusiastic in praise of the size and perfection of my flowers.

As a consequence I am by no means discouraged. I shall try again this year (with only about a third as many varieties) and as my beds are all dug, I anticipate still better success than last season. This enthusiasm of mine has all gushed out on to paper before I thought of it; I did not mean to bother you with it, but I felt like telling my experience to some one that would appreciate it.

Shall send an order for plants soon. The Roses that you sent me last spring are all alive but one. The climbing varieties grew two feet or more before winter.

Our weather here is beautiful; the thermometer has scarcely touched zero this winter, and most of the time we have had windows and doors open.—A. FITCH, JR., *Central City, Neb.*

OLD GRAPE VINES.—In response to many inquiries about the proper method of pruning old or neglected vines in the garden and vineyard, we are pleased to lay before our readers, in this issue, the views and practices of Mr. Snell, a successful vine-grower, in large practice, on the banks of the beautiful Canandaigua Lake, in this State. The usual method of pruning employed in his, as well as in many others of the best vineyards, is the one that was fully described at page 100 in our last volume.

CORRESPONDENT'S NAMES.—We have a mild winter and more rain than usual. It would be a pleasure if writers who state their horticultural experience in the MAGAZINE would give the State and the County they live in, as it could then be better understood in what manner their practices should be modified to be adapted to other localities.—O. S., *Dennard, Ala.*

### IMPROVING SCHOOL GROUNDS.

Many of the common schools of Michigan commenced last year to raise flowers, and some to plant trees and otherwise ornament the school grounds. The work was engaged in with much interest, as now appears by a report, in pamphlet form, by the State Horticultural Society. What State shall be next heard from?

For a number of years we have made the offer, and still continue it, to supply schools to use on their own grounds, with flower seeds at half price, to the amount of five dollars, or less if desired. Summer flowering bulbs, such as the Gladiolus and Dahlia, and, if our stock shall warrant it, some kinds of plants will be sent, to the amount of five dollars or less in each case, at three-quarters the regular price. The extra cost of sending plants and bulbs by mail or express obliges us to place the cost of them higher than that of seeds.

Those who avail themselves of this offer we shall hope to hear from next fall, stating the result of their summer's work in the school garden.

### A GOOD CROP OF ONIONS.

Last year I received from you two pounds of Wethersfield Red Onion Seed. I raised from it one hundred bushels of prime Onions; they sold for one dollar and fifty cents a bushel. Excepting mine there was not one bushel of Onions raised within five miles of me.

I raised one hundred and fifty bushels of Beets. I do all my own work, house-keeping and all; am sixty-seven years old, and badly crippled. I use a Planet, Jr., Combined Drill and Cultivator.—W. L. C., *Kill Creek, Kas.*

### KEEPING CELERY IN WINTER.

A new method of storing Celery for winter use is to take some boxes and lay them on their sides on the cellar bottom, and place first a layer of damp moss, or sphagnum on the side of each box, and then the heads of Celery, with the roots on, side by side, making a layer on the moss, then place a layer of moss and another of celery, until the box is full, finishing with a good layer of moss next to the upper side. Then lift the box upright so that the plants will stand on their roots.

### FORESTRY.

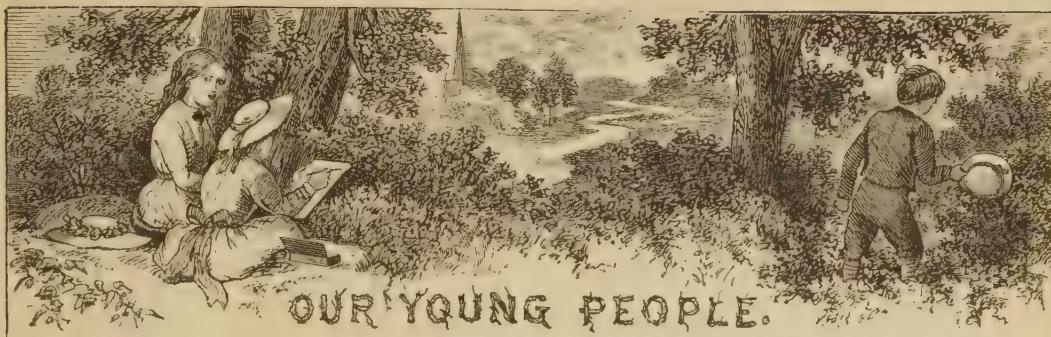
So great is becoming the interest in forestry, that many will probably be pleased to learn of the publication of a convenient manual on this subject. Such, doubtless, will be "Hough's Elements of Forestry," announced by Robert Clarke & Co., Publishers, of Cincinnati, as now in press, and to be issued immediately. This work is by Franklin B. Hough, Ph. D., of the Forestry Division, of the Department of Agriculture, at Washington, D. C. The author's investigations for several years in behalf of the government, have peculiarly qualified him to treat his subject in a manner best adapted to impart practical instruction in relation to the planting and care of forest trees to those, at the west, or elsewhere, who are seeking success in planting trees for timber, wind-breaks or ornaments.

### AN ACTIVE SOCIETY.

The Portage County (Ohio) Horticultural Society issues its proceedings in a pamphlet of seventy-two large, closely set pages. This society, during the last year, held twelve meetings, one each month, at which garden products of all kinds were exhibited, and members engaged in the reading of essays and discussions in relation to the cultivation of fruits, flowers, vegetables, ornamental trees and shrubs, improvement of the highways, lawns, school grounds, and kindred subjects. A great amount of valuable information and practical experience was thus interchanged. Probably no county society in the country is doing more than this one to promote horticultural and rural taste. Great work is yet to be done everywhere by horticultural and agricultural societies.

### THE "GUIDE" IN A. D. 2005.

A lady sending to be bound her number of our last volume, writes as follows: "In my package of volume four, I have sent my *Floral Guide* of 1881, hoping you will gratify a whim I have of having it bound at the commencement of the volume. I wish it to go in intact, the outside cover not to be removed. It is a work of art both in design and color. I wish my grandchildren to compare it with what yours may do somewhere in the 20th century."



## OUR YOUNG PEOPLE.

### OLD TREES.

The Waverly Oaks are a group of venerable White Oak trees, in the town of Waverly, Middlesex County, Mass. Their great size and evident longevity have attracted many visitors to them. Few of us will ever see the giant trees of California, the Evergreen Redwood, *Sequoia gigantea*. The Boston Society of Natural History has, in its museum, a hollow section of one of these trees, bound with iron hoops. Through this huge cylinder a horseman might easily ride erect. The largest Sequoias are from thirty to forty feet in diameter, three hundred to four hundred feet high, straight as a candle, and twelve to twenty centuries old, as estimated. The Waverly Oaks are about twenty in number, standing on a narrow and well defined moraine, brought down by some glacier from Helmet Hill, that now raises its beautiful, grassy dome, crowned with a leafy crest of forest trees, a short distance to the north. It is a conspicuous object in the charming valley of the winding Charles River. These Oaks are all large trees, evidently the growth of centuries; their acorns do not take root. The patriarchs are the last of their race. The only large trees near them are a few very old Elms. The Oaks are not so high as one might suppose, but have huge trunks and branches. One tree measures about thirteen feet in girth, and another seventeen feet at a height of four feet from the ground. This tree has a branch thirty-five feet long, and covers a circle of more than seventy feet in diameter. Would you climb the Oak? You must take a ladder to reach a limb small enough to grasp with the hands. These giants are still green, though some of the older branches are dead. One Oak fell many years since; its age was estimated by Professor L. AGASSIZ at 1,300 years.

What a history have those tree had? Century after century has the Indian rested in their shadows, revering them as gifts of the Great Spirit. The tide of war has raged around them, and the pipe of peace passed from hand to hand. The Indian has given place to the white man, the wolf and the bear to lowing cattle; still the trees tower in silent majesty, and promise to stand for generations to come.

A tree burned down in Greece, in 1881, by careless gypsies, was probably the oldest in the world. It was described by Pausanius several centuries before Christ, and is supposed to have been 2,800 years old. Among the Cedars now grown on Mount Lebanon, none are apparently more than 900 years old.—UNCLE WILL.

### VIEW OF A SCHOOL ROOM.

It was at the noon recess. The day was stormy and blustering; the air was full of whirling snow as though driven by winds from every point of the compass. Most of the pupils had brought their dinners, and every boy his sled—hoping that by noon the storm would have abated. Small brothers and sisters had been promised a fleet ride on the coasting ground, and then they were to play by the warm fire inside, with the promise of another ride at night going home; after which disposal of the wee folks, the big boys usually became so bewildered by the excitement, that they somehow got each other's big sisters on their sleds. But such mistakes were good-naturedly overlooked, and not allowed to interfere with the general jollity.

But to-day there was no relenting of the pitiless storm. The frosty battalions of small snow-flakes crossed each other at sharp angles in their lines of descent; or, breaking ranks, engaged in a sharp swirl of contest which ended in a discomfitted dash at the window panes, or a stinging

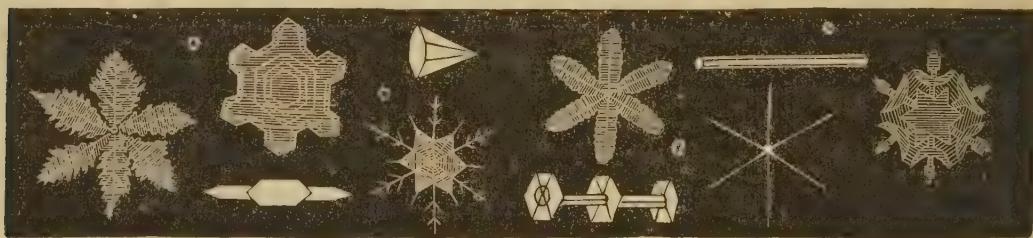
slap in the face of a forlorn traveler. Those of the girls who had intended going home had found their dinners sent to them in advance. The little brothers and sisters had come in from the other rooms to lunch with their elders, and the presence of the gentlemanly janitor secured order and quiet until the half-hour stroke after one o'clock should have summoned them all to their lessons.

Luncheon being over, some of the scholars sat at their desks talking, looking over lessons or drawing; some were promenading the long aisles; while others stood in groups discussing some matter of interest to each. Suddenly there was a clashing against one of the windows which arrested every voice and foot-step. All eyes were turned in that direction—where a large bird, blinded and bewildered by the storm was beating its wings furiously against the glass. The janitor raised a finger of silence and said, "Perhaps we

swinging limb in pleasant weather; but just now I'm very comfortable up here—thank you. I've broken up housekeeping for a winter vacation, and have nothing to worry about; shall sit here and warm myself until I see a good chance to escape." Then he heard a girl say, "There is a large cedar tree near a window in my grandmother's room, and she says she takes great comfort watching the birds flit in and out of it all day long. They make cheery comfort for her." Then some boy called out—

"My father says that if people want birds near their homes in winter, they must have Cedars and Pines to shelter them."

"Yes, indeed," thought the blue-jay—and not be afraid of leaving a few tall weeds here and there to furnish us with seeds when everything else is covered with snow. I wonder for what they think so many noxious plants were made—



FORMS OF SNOW FLAKES.

can get the poor thing inside." And gently raising the window and reaching out his hand, he drew the bird within. Affrighted at the sight of so many human beings, he instantly darted from his hand, and circling about their heads for a moment, perched near the ceiling, on one of the evergreen branches which had been a part of the decorations for their galaday exercises before the holiday suspension of their school. He soon seemed to feel the genial warmth of the room, and cocked his head from side to side and peered at the curious medley below.

"Ah, yes;" he said to himself—"I know you—every one of you! And a pretty lot of barbarians you are! I wonder if this is where you learn to shy 'stones so straight!'"

Just then a little boy sang out—

"A jay-bird sat on a swinging limb,  
He winked at me and I winked at him."

"O, yes, that's my name," thought the blue-jay—"and I don't mind winking at a boy for fun when I'm rollicking on a

too noxious for horses and cattle to eat—if not that they might be left to supply us with winter food? It's as plain as the top-knot on my head!" and here he bristled up that appendage in his most ferocious fashion. Then the little one's shouted, "O, see how saucy he looks!" But the bird didn't care, and felt quite safe until he saw a fellow making motions to throw an empty ink-stand at him; but the janitor shook his head, and the boy dropped it. Then followed all sorts of chattering and bantering, and discussions; and for a time their visitor was forgotten. But he was on the alert. No "lady" in her "chamber" had ever "up with her shears and clipped off his ears"—and he intended to hear, as well as to see, what was going on below.

So directly, he noticed a youth—who always won the prizes for drawing—dashing off picturesque chalk-sketches on a black board. A pleasant-faced girl looking on remarked—

"You have a competitor near by who-

can quite throw you in the shade." "Where is he?" asked the 'other, hastily looking around.

"He was in here early this morning, but just now he is busy at work in another part of the building."

"Have you seen his drawings?" "Often; they are very beautiful." At this the youth's face flushed as he inquired—

"Where does he live? and what is his name? I'd like to know more about him before I encounter him." "I want you to guess his name. He lives wherever the climate best suits him; the air of our houses, heated day and night, does not agree with him, and—"

"O, he's a sickly fellow, is he?" "and my father says it will be a loss to civilization when his magic pictures are seen no more in our homes."

"And my father"—(interrupted an impolite boy)—"who is a doctor, says people will have catarrh and bronchitis as long as they burn out the air so dry with their—"

"O bother! can't you be still? exclaimed the impatient youth."

And then the blue-jay croaked a little, just to try his throat, lest he should be getting catarrh already, in the hot, dry air that crowded to the ceiling; and mightily he wished they would put a big kettle of water on the stove. For he was an intelligent bird—this blue-jay was.

Well, the young student then went on to inquire why this "artist-chap" didn't come out, like a man, and show his colors; and got for answer—

"He uses no colors;" and then throwing open the vestibule door, this mischievous girl exclaimed—

"Let me introduce you to the works of Professor Frost—Mr. Jack Frost, if you please. You see he sketches on glass. Let me call your attention to those forests and cities; castles and church spires; and to those battlements and towers; to say nothing of the finer, fern-like tracings; and those thickly-studded points that look like starry scintillations. Examine that surface with your magnifying glass, sir; and acknowledge the perfection and nicety in every detail, to which no tracery of yours can ever attain." "I do acknowledge at once; and yield profound obeisance to the superior skill of Master Jack Frost. And, by the way, is he not

the oldest Master of Arts that we know of?"

Then the bell began to clang, the teachers were stamping snow in the doorways, there was a general rush and commotion to get seated, and the bird commenced croaking harshly with fright, and saying to himself, "It's now or never," and darted swiftly through the top of the open door-ways, and was out of sight in an instant.. The teacher heard a whir of wings, caught a glimpse of something—and turning toward the school said, "What was that?"—AUNT MARJORIE.

#### SOME NICE FLOWERS.

MR. EDITOR:—I think old Mr. GRAY knows a good flower when he sees it, by what he said in the last number of the MAGAZINE. The *Datura Wrightii*, which



DATURA WRIGHTII.

he mentioned, I always have in my garden, and there is nothing that pleases me more, and it is the special favorite of the young people that visit my grounds. It is pretty difficult to ripen the seed, as our summers do not seem long enough, but I generally manage to get a few pods to perfect their seed. The roots of this plant are fleshy, or tuberous, and may be kept in a cellar like Dahlias. Plants are, however, so easily grown from seed, that few take the care to save them. I once had several that lived over the winter in the garden, and made large, fine plants the second summer. The winter was mild, and in covering some Lilies in the neighborhood, these had received some of the covering. The double kinds I do not think half as pretty as the single.

The Nigella, or Love in a Mist, I wish had been more fully described; it is such a curious looking flower, that perhaps you will give an engraving that will speak for itself, and plainer than I could with words.



NIGELLA.

If you will have patience with me, I will introduce two more favorites of mine to the notice of the young people, the Scarlet Flax, which has very pretty slender leaves, like the common Flax, with beautiful scarlet flowers, that look as though they were floating in the air. I like a dozen or so of these plants in a mass or group.



SCARLET FLAX.

The Convolvulus Minor, is the other flower to which I alluded. The flowers are not so large as those of the Morning Glory, but just about as handsome, and as the plant creeps over the ground like a Verbena, and covers a space three or four feet in diameter, with scores of flowers, its beauty may be imagined, especially in the early morning when the flowers are the brightest and best. Its blooms close in the afternoon, but that is no objection. We don't want all the beautiful things all the time. The rainbow would not be half as handsome if

it was in the sky always. I hope old Mr. GRAY will continue to interest the young folks, and he may rest assured his lessons are not lost upon some of us who are not very young.



CONVOLVULUS MINOR.

I had often heard of the Dwarf Morning Glory, and thought it was a climber, though shorter than the old Convolvulus Major, which was always a great favorite of mine. I don't know of anything more charming than to go into the dewy garden on a summer morning, and behold the Convolvulus, which is rightly called the Glory of the Morning. About a year ago last summer, I was stopping for a day and night in the pleasant village of Olean, in the State of New York, and on taking an early morning walk, I beheld a most dazzling sight—a



CONVOLVULUS MINOR PLANT.

little garden with the fences, and almost every other object made bright and beautiful as rainbows with this flower. It was only about six years ago, when visiting the garden of a friend, that I first began to understand the beauty of the dwarf or trailing Convolvulus, which I recommend to all young friends.—UNCLE JOHN.





ASTERS